

MANAGEMENT

MGT 118 Principles of Supervision (3)

3 hours lecture per week

Recommended Preparation: ICS 100 or Microsoft Word, Microsoft Excel, Microsoft PowerPoint; ENG 100; MATH 24.

MGT 118 focuses on supervisory concepts applying business terminology and practices of today's first line managers. The relationship of these five functions of management (planning, organizing, staffing, influencing/leading, and controlling) and the role of the supervisor in the business organization will be studied in detail.

Upon successful completion of MGT 118, the student should be able to:

1. Utilize terms, concepts and theories of supervision that are to be applied in a problem solving activity.
2. Conduct research both primary and secondary that address a management problem. Research is to be applied in the construction of a formal management plan.
3. Present in writing and verbally a formal management plan constructed through the application of supervision terms, concepts, theories and research results that solves a management problem.

MGT 122 Organizational Behavior (3)

3 hours lecture per week

Recommended Preparation: ENG 100.

MGT 122 covers key concepts and issues underlying the modern practice of interpersonal relations from the supervisor's perspective. Major topic areas are self-awareness, communication, interpersonal relationships, values, attitudes, working with others, working with supervisors, customer service, and self-improvement. This course will enable students to develop the ability to handle human relations constructively, develop a greater comprehension of the causes of interpersonal conflict, and to make intelligent choices when people-related problems arise.

Upon successful completion of MGT 122, the student should be able to:

1. Develop a personal performance plan to maximize workplace productivity.
2. Identify personality types and strategies to motivate others.
3. Create an organization structure and management strategy to support different company cultures.

MGT 124 Human Resource Management (3)

3 hours lecture per week

Recommended Preparation: ICS 100 or Microsoft Word, Microsoft Excel, and Microsoft PowerPoint; ENG 100; MATH 24.

MGT 124 introduces principles, organizations, techniques and strategies of personnel administration, procurement and placement, improvement of performance, management and labor relations, pay and benefits, workplace security and safety and other services provided to the firm by the personnel section. This course provides the practical and operational knowledge of the responsibilities involved in personnel management within the business profession.

Upon successful completion of MGT 124, the student should be able to:

1. Utilize terms, concepts and theories of Human Resource Management that are to be applied in a problem solving activity.
2. Conduct research in both primary and secondary that addresses management problem(s). Research is to be applied in the construction of a formal human resource management plan.
3. Present in writing and verbally a formal human resource management plan constructed through the application of human resource terms, concepts, theories and research results that solves a management problem.
4. Utilize terms, concepts and theories of Human Resource Management that are to be applied in a problem solving activity.

MARKETING

MKT 120 Principles of Marketing (3)

3 hours lecture per week

MKT 120 introduces students to marketing concepts and the application of the process of marketing products, services, and ideas to provide value and benefits to both for-profit and non-profit organizations. Students will develop an understanding of the marketing process, analyze marketing opportunities and develop strategies to fulfill the needs of the target markets.

Upon successful completion of MKT 120 the student should be able to:

1. Explain and discuss the impact that various business cultures have on the marketing process.
 - a. Explain the marketing process
 - b. Discuss and give examples of companies practicing social responsibility.
 - c. Discuss the significance of Customer Relationship Management (CRM).
2. Analyze marketing opportunities to develop new and to improve markets for business sales growth.
 - a. Describe the marketing research process
 - b. Explain business marketing
 - c. Distinguish different consumer behaviors
 - d. Identify global marketing opportunities
3. Analyze business functions and practices to develop marketing strategies that will result in profits for a business.
 - a. Summarize market segmentation strategies
 - b. Explain product strategies
 - c. Describe place (distribution) strategies
 - d. Discuss price strategies
 - e. Explain promotion (communication) strategies
 - f. Explain positioning strategies
 - g. Describe the strategic planning process
 - h. identify Internet marketing strategies

MKT 130 Principles of Retailing (3)

3 hours lecture per week

MKT 130 introduces the concepts and principles of retailing and their roles in the function of marketing. Emphasis is on organization, operation and management of a retail store. Buying, handling and aspects of merchandising management will be presented. Topics such inventory and expense control, personnel, e-commerce, merchandise and sales promotion are also covered.

Upon successful completion of MKT 130, the student should be able to:

1. Describe the role of retailing in the free enterprise system.
2. Apply principles of store organization and operations.
3. Explain the concepts of store location, design, and layout.
4. Apply principles of the buying function.
5. Describe the techniques of retail promotion.
6. Summarize the principles of merchandise and expense control systems.
7. Construct a merchandise plan.
8. Construct an assortment plan.
9. Prepare a buying plan.
10. Calculate open-to-buy.

MKT 150 Principles of Customer Service and Selling (3)

3 hours lecture per week

MKT 150 focuses on the principles and methods of customer service and selling in the marketing process. Emphasis is on the use of customer service to retain customers and grow revenue, the retail and business-to-business sales process and the various aspects of selling strategically. Students will develop a sales presentation and customer service program.

Upon successful completion of MKT 150, the student should be able to:

1. Demonstrate the principles of customer service for customer retention and to increase customer revenue contribution.
2. Demonstrate various sales principles and methods of retail and business-to-business selling.
3. Demonstrate the steps in the retail and business-to-business sales process.
4. Design and deliver a sales presentation.
5. Develop a customer service program.
6. Explain terminology associated with the field of selling and customer service.

MKT 180 International Marketing (3)

3 hours lecture per week

MKT 180 studies and applies concepts and principles of international marketing in the global economy. Major topic areas include export market selection, market entry strategies, product and pricing decisions, promotion and marketing communication, physical distribution, and other international marketing activities.

Upon successful completion of MKT 180, the student should be able to:

1. Identify the nature and scope of international business.
2. Apply concepts of international marketing and exporting to make appropriate business decisions.
3. Examine the role of culture and politics in international marketing.
4. Demonstrate knowledge of economic and geographic influences on trade.
5. Evaluate global marketing opportunities.
6. Incorporate importing, exporting, and international trade into a marketing project.
7. Analyze strategies for entering foreign markets.
8. Demonstrate knowledge of Product, Price, Promotion, and Place (the 4 Ps) of marketing in the international global economy.

MKT 235 Principles of Merchandise Management (3)

3 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MKT 120; a grade of "C" or higher in MKT 130 or concurrent enrollment in MKT 130, with consent of instructor.

MKT 235 focuses on the performance and application of the principles of buying, physical handling, and managing the financial aspects of merchandising. This is a practical course on merchandise plans, customer demand, merchandise sources, evaluation methods, negotiating, reordering, merchandise forecasting and budgeting, and inventory controls. Students learn strategies to effectively compete in a market through the construction and implementation of a merchandising system.

Upon successful completion of MKT 235, the student should be able to:

1. Apply concepts and principles of an effective buying process.
2. Differentiate the buying processes for different types of retail stores.
3. Describe the different roles of the retail buyer.
4. Construct a merchandise plan.
5. Construct an assortment plan.
6. Construct a buying plan.
7. Formulate and apply an open-to-buy system.
8. Explain fundamentals of inventory management, inventory shrinkage control and inventory turn.
9. Identify target consumer for a particular store.
10. Explain the importance of positive vendor relationships.
11. Identify professional and ethical business practices.
12. Demonstrate negotiating skills.
13. Explain the buyer's role in visual merchandising, advertising, public relations, sales promotion, and sales support services.
14. Design a seasonal merchandising strategy based on store needs.
15. Prepare a sales projection.
16. Differentiate the types of technologies used to effectively execute a merchandise plan.

MKT 260 Integrated Marketing Communication (3)

3 hours lecture per week

Prerequisites: A grade of "C" or higher in MKT 120; a grade of "C" or higher in MKT 150 or concurrent enrollment in MKT 150, with consent of instructor.

MKT 260 focuses on the application of strategies of all aspects of the marketing communication process of advertising, sales promotion, personal selling, public relations, direct marketing and online channels to integrate and coordinate its message and media to deliver, clear reinforcing communication. Students analyze, integrate, and apply marketing communication tools appropriately and effectively in a targeted marketing campaign.

Upon successful completion of MKT 260, the student should be able to:

1. Evaluate the role of each integrated marketing communication tool in an integrated plan: advertising, sales promotion, direct marketing, personal selling, and public relations.
2. Build customer segments around promotional strategies using a variety of selection variables.
3. Assess the appropriateness of various print, broadcast, and online media for marketing communication efforts for different product classifications.
4. Apply appropriate public relations strategies to maintain a positive image, educate the public about the company's goals and objectives, introduce new products or services, and help support the sales efforts.
5. Develop sales promotion activities that stimulate consumer purchasing.
6. Develop direct marketing campaigns that increase sales.
7. Demonstrate methods of retail, business-to-consumer, and business-to-business selling.

MKT 293 Marketing Internship (3)

1 hour lecture, 8 hours practicum per week

Prerequisite(s): A grade of "C" or higher in MKT 130; a grade of "C" or higher in MKT 150; a grade of "C" or higher in MKT 180; credit or concurrent enrollment in MKT 235 or consent of program coordinator or instructor; credit or concurrent enrollment in MKT 260 or consent of program coordinator or instructor.

MKT 293 is a capstone work-study course providing opportunities to reinforce skills learned in Marketing courses by applying them in an actual job situation. This course provides students the ability to analyze their work and the business operation in relationship to the principles, concepts and procedures learned in their courses.

Upon successful completion of MKT 293, the student should be able to:

1. Integrate the accumulated knowledge and skills from previous course work into a practical comprehensive working knowledge base through work application.
2. Develop a bridge between academia and the professional world.
3. Attain practical on-the-job experience in an actual occupational situation compatible to the student's major curriculum.
4. Communicate effectively and use appropriate social skills within the work environment.
5. Employ to the fullest extent the student's abilities, initiative, and creativity.
6. Describe the social and economic responsibilities of those engaged in marketing.
7. Build practical work experience while under the guidance of professionals who will help identify the personal qualities and work skills required of employees in your chosen field.
8. Perform job duties at a worksite according to industry standards.
9. Demonstrate progressive leadership that is competent, assertive, self-reliant and cooperative through the exploration of vocational opportunities.
10. Demonstrate the ethical and professional practices necessary to work in the field.
11. Explain the impact of marketing on the economy.
12. Identify areas of self-improvement in knowledge, skills, attitude and behavior.

MATHEMATICS

MATH 24 Elementary Algebra I (3)

3 hours lecture per week

Prerequisite(s): A grade of "P" in PCM 23, or placement test recommendation of MATH 24 or higher.

Comment: Credit/No Credit grading only. A scientific calculator is required.

An introduction to basic algebra topics, MATH 24 is the first course in a two semester sequence of Elementary Algebra courses. Instruction includes units on operations with signed numbers, linear equations and inequalities in one variable, the coordinate plane, and linear systems in two variables.

Upon successful completion of MATH 24, the student should be able to:

1. Translate word phrases into algebraic expressions.
2. Use the order of operations to find the value of algebraic expressions.
3. Identify whole numbers, integers, rational numbers, irrational numbers, and real numbers.
4. Find the absolute value, additive inverse, and multiplicative inverse of a real number.
5. Perform the basic operations (add, subtract, multiply, and divide) with signed rational numbers.
6. Identify the following properties: commutative, associative, identity, inverse, distributive.
7. Identify terms, like terms, and numerical coefficients in a polynomial.
8. Solve linear equations and inequalities in one variable.
9. Solve a formula for a specified variable.
10. Write and solve ratios and proportions including those from word problems.
11. Plot an ordered pair and state the quadrant in which it lies.
12. Graph linear equations and inequalities by point plotting, the intercept method, and the slope-intercept method.
13. Write the equation of a line given two points or the slope and y-intercept or the slope and a point on the line.
14. Solve linear systems of equations or inequalities in two variables by algebraic and graphic methods.
15. Use linear systems to solve word problems.
16. Calculate the slope of a linear equation in two variables.

MATH 25 Elementary Algebra II (3)

3 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 24, or a grade of "C" or higher MATH 81, or a COMPASS Placement test recommendation of MATH 25.

Comment: A scientific calculator is required.

MATH 25 is the second course in the two-semester sequence of Elementary Algebra courses. Instruction includes units on exponents, polynomials, factoring, rational expressions and equations, radical expressions and equations, and quadratic equations.

Upon successful completion of MATH 25, the student should be able to:

1. Identify and use the laws of exponents to simplify expressions with integral exponents.
2. Use scientific notation in calculations.
3. Add, subtract, multiply, and divide polynomials in one or two variables.
4. Factor the greatest common factor from a polynomial expression.
5. Factor a polynomial of four terms by grouping.
6. Factor general trinomials $ax^2 + bx + c$, where a, b, and c are integers.
7. Recognize and factor the difference of two squares.
8. Recognize and factor a perfect square trinomial.
9. Write rational expressions in lowest terms.
10. Add, subtract, multiply, and divide algebraic fractions.
11. Solve equations containing rational expressions.
12. Solve word problems that lead to equations containing rational expressions including indirect variation.
13. Identify a given radical as rational, irrational, or not real.
14. Evaluate a radical expression.
15. Simplify a radical expression.
16. Add, subtract, multiply, or divide radical expressions.
17. Solve equations containing radicals.
18. Solve word problems that lead to equations containing radical expressions.
19. Solve a quadratic equation with integral coefficients by factoring.
20. Solve equations of the form $(ax + b)^2$, using the square root property of equations.

21. Complete the perfect trinomial square given a partial trinomial.
22. Use the quadratic formula to solve quadratic equations.

MATH 32 Statway I (6) Fall

6 hours lecture per week

Prerequisite(s): A placement test recommendation of MATH 24 or MATH 81 or higher level mathematics, or a grade of "P" in PCM 23.

Corequisite(s): Qualification for ENG 22 or higher level English course.

Comment: Letter grade only. MATH 32 may not be audited. MATH 32 may not be taken credit/no credit. A TI-83+ or TI-84 graphing calculator is required. MATH 32 is offered in the fall semester only.

MATH 32 consists of statistical methods integrated with algebraic tools to prepare students to analyze processes encountered in society and the workplace. The course provides an introduction to algebra and descriptive statistics utilizing an integrated approach. MATH 32 is the first course in a two course sequence.

Upon successful completion of MATH 32, the student should be able to:

1. Recognize characteristics of a well-designed statistical process and possible source of bias.
2. Articulate and interpret various statistics such as mean, median, mode, range, variance and standard deviation.
3. Draw and interpret various graphs, such as pie graph, bar graph, dotplot, histogram and relative frequency histogram.
4. Draw a scatter diagram, calculate and interpret the corresponding correlations. Use residual to determine if a line is an appropriate model and make a prediction using least squares regression line if feasible.
5. Identify exponential model and its real life application in growth factor (or percentage increase) and decay factor (or percentage decrease).
6. Use two-way table to determine marginal, joint and conditional probability.
7. Calculate the probability involving a discrete, a continuous or a standard normal distribution.
8. Examine and model linear relationships in the context of a real-world problem.
9. Identify and interpret slope and intercepts in the context of a word problem.
10. Develop numeracy skills through exploration in number line, exponents, percentage, scientific notation and proportion.
11. Apply unit analysis in the context of a problem.
12. Master equation solving skills in solving linear equations and inequalities.

MATH 81 Foundations of Mathematics (6)

6 hours lecture per week

Prerequisite(s): Qualification for English 22, completion of PCM 23 with a grade of "C" or higher, or recommendation by the COMPASS placement test.

Comment: A TI-83 or TI-84 graphing calculator is required. Satisfactory completion of MATH 81 qualifies students for MATH 100, BUS 100, MATH 111, and MATH 115. MATH 81 does not qualify students for MATH 103, MATH 135 or higher level mathematics.

MATH 81 is designed to introduce students to problem solving, hands-on activities, technology, basic algebra, data analysis, graphing and geometry. It is intended to prepare students for college level mathematics (BUS 100, MATH 100, MATH 100H, or MATH 115). TI-83 graphing calculators will be used extensively.

Upon successful completion of MATH 81, the student should be able to:

1. View mathematics as connected to the real world in everyday life and in vocational disciplines.
2. Apply technology (computers and graphing calculators) to solve mathematical problems and judge the reasonableness of the results.
3. Translate problem situations into symbolic representations and use these representations to solve problems.
4. Work effectively in groups and communicate mathematics both orally and in writing.
5. Use various graphical representations of data to uncover important patterns and to interpret these patterns in a real-world context.
6. Summarize and interpret data using statistical measures.
7. Use a graphing calculator to enter, manipulate, and display data in various ways.
8. Use the correct order of operations with expressions involving signed numbers and absolute values.
9. Solve and graph linear equations.
10. Solve problems involving ratios and proportions.
11. Graph quadratic functions and exponential functions.
12. Use laws of exponents for expressions with integral exponents.
13. Use scientific notation.
14. Simplify and evaluate square roots.

15. Find perimeters, areas, and volumes of various 2- and 3-dimensional figures.
16. Use the Pythagorean Theorem.

MATH 100 Survey of Mathematics (3) KCC AA/FS

3 hours lecture per week

Prerequisite(s): Qualification for MATH 100; qualification for ENG 22 or ESOL 94 on placement test.

Comment: Students will need a scientific calculator for MATH 100.

MATH 100 is a survey of important concepts in algebra, logical structure, numerical systems, financial mathematics, and probability and statistics, designed to acquaint non-specialists with examples of mathematical reasoning, and to develop an appreciation and understanding of their historical development and of the relationship of mathematics to the modern world.

Upon successful completion of MATH 100 the student should be able to:

1. Demonstrate basic knowledge of numeration systems.
2. Use basic techniques in symbolic logic to draw deductive conclusions in simple situations.
3. Solve some problems in finance, including compounded interest, annuity, and installment payments etc. using scientific calculators.
4. Identify the concepts of permutations and combinations and be able to apply those concepts in real situations.
5. Demonstrate knowledge of probability and statistics by solving simple statistical problems.

MATH 103 Fundamentals of College Algebra (3) KCC AA/FS

3 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 25 or a KCC Placement Test recommendation of MATH 103.

Recommended Preparation: Qualification for ENG 100.

Comment: A scientific calculator is required.

MATH 103 extends topics introduced in the elementary algebra sequence and prepares students for precalculus. Instruction includes units on algebraic simplification of polynomial, rational, exponential, and radical expressions, as well as solving equations and inequalities involving absolute value, polynomial, rational, exponential, and radical expressions, and the graphing of lines and parabolas. The topic of functions is introduced early in the course and is integrated in the subject matter throughout the course.

Upon successful completion of MATH 103, the student should be able to:

1. Add, subtract, and multiply polynomial expressions.
2. Factor polynomial expressions.
3. Divide polynomial expressions using synthetic division.
4. Determine if a mathematical relation is a function.
5. Find the domain of polynomial, rational, and radical functions.
6. Simplify, add, subtract, multiply and divide rational expressions.
7. Simplify, add, subtract, multiply, and divide exponential expressions with rational exponents, and radical expressions with an index of 3 or higher.
8. Solve linear and absolute value equations and inequalities.
9. Solve quadratic and rational inequalities.
10. Solve quadratic, rational and radical equations.
11. Solve a 3 X 3 system of linear equations.
12. Solve equations that are quadratic in form.
13. Determine the equation of a line (including lines parallel or perpendicular to a given line).
14. Graph a parabola, a system of 2 X 2 equations and inequalities, and graph square root and cube root functions.
15. Model and solve problems involving systems of linear equations (2 X 2 and 3 X 3), polynomial equations with Rational solutions, and quadratic and rational equations with Real solutions.
16. Solve compound inequalities.
17. Solve problems involving direct, inverse, and combined variation.

MATH 111 Mathematics for Elementary School Teachers I (3)

3 hours lecture per week

Prerequisite(s): A grade of "A" in MATH 24, a grade of "C" or higher in MATH 25, a grade of "C" or higher in MATH 81, or Placement Test recommendation of MATH 100 or higher; qualification for ENG 100.

MATH 111 gives prospective elementary education majors the depth of understanding necessary to teach mathematics in the elementary classroom. Topics will include numbers, operations on sets, patterns, functions and algebra. Emphasis will be on understanding, communication, problem solving, representing mathematical ideas, and reasoning and proof.

Upon successful completion of MATH 111, the student should be able to:

1. Explain ways of representing numbers, relationships among numbers, and number systems.
2. Perform various operations on sets; union, intersection, etc.
3. Identify and describe various types of patterns and functional relationships.
4. Use symbolic forms to represent, model, and analyze mathematical situations.
5. Solve a variety of problems.
6. Communicate mathematical ideas verbally, in writing, and through mathematical representations to various audiences.
7. Apply appropriate mathematical reasoning to justify solution paths to various problems.

MATH 112 Mathematics for Elementary Teachers II (3) KCC AA/FS

3 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 111.

MATH 112 gives prospective elementary education majors the depth of understanding necessary to teach mathematics in the elementary classroom. Topics will include representations of and operations on the natural numbers, integers, rational numbers and real numbers, and properties of those operations. Emphasis will be on communication, connections to other parts of mathematics, problem solving, representations, and reasoning and proof.

Upon successful completion of MATH 112, the student should be able to:

1. Demonstrate various representations of Natural numbers and Integers.
2. Define the operations on Natural numbers and Integers.
3. Identify, describe, and demonstrate the proper use of the properties of operations on Natural numbers and Integers.
4. Demonstrate various representations of Rational and Real numbers.
5. Define the operations on Rational and Real numbers.
6. Identify, describe, and demonstrate the proper use of the properties of operations on Rational and Real numbers.
7. Apply appropriate mathematical reasoning to justify solution paths to various problems.
8. Solve a variety of problems.
9. Communicate mathematical ideas verbally, in writing, and through mathematical representations to various audiences.
10. Demonstrate mathematical literacy and fluency.

MATH 115 Statistics (3) KCC AA/FS

3 hours lecture per week

Prerequisite(s): A grade of C or higher in MATH 25 or higher, or placement at MATH 100 or higher level mathematics course. Qualification for ENG 22 or ESOL 94 or higher level English course

MATH 115 offers a study of elementary probability and statistics including standard deviation, calculations and inferences about means and proportions, normal distributions and linear correlation.

Upon successful completion of MATH 115, the student should be able to:

1. Articulate and interpret various descriptive statistics, such as mean, median, mode, range, variance and standard deviation.
2. Draw and interpret various graphs, such as frequency histograms, bar graphs and cumulative frequency histograms.
3. Solve probability problems involving the concepts of independent events, mutually exclusive events and conditional probability.
4. Calculate probabilities involving normal random variables.
5. Determine and interpret (for large samples) confidence interval estimates of population means and proportions
6. Draw a scatter diagram, determine and draw the corresponding regression line, and calculate and interpret the corresponding correlation coefficient.

MATH 132 Statway II (3) Spring KCC AA/FS

3 hours lecture per week

Prerequisite(s): MATH 32 with a grade of "C" or higher.

Recommended Preparation: ENG 22 with a grade of "C" or higher is the recommended preparation.

Comment: Letter grade only. MATH 132 may not be audited. MATH 132 may not be taken credit/no credit. A TI-83+ or TI-84 graphing calculator is required. MATH 132 is offered in the spring semester only.

MATH 132 students study statistical methods integrated with algebraic tools in order to prepare students to analyze processes encountered in society and the workplace. The MATH 132 course provides an introduction to algebra and descriptive statistics utilizing an integrated approach.

Upon successful completion of MATH 132, the student should be able to:

1. Use sampling distributions to reason on population claims.
2. Construct point estimates and confidence intervals to estimate population means and population proportions.
3. Construct point estimates and confidence intervals for the difference in two population proportions.
4. Conduct statistical tests and interpret results for claims on population means.
5. Conduct statistical tests and interpret results for claims on paired sample means and independent sample means.
6. Execute the Chi-Square test for one-way tables.
7. Execute the Chi-Square test for independence and homogeneity in two-way tables.
8. Make connections from various types of statistical analysis to real-world problems.
9. Reason using language, structure of algebra, modeling and statistical testing to investigate, represent and solve real-world problems.
10. Use the Central Limit Theorem (CLT) to infer the normality of the sampling distribution of sample means.

MATH 135 Precalculus: Elementary Functions (3) KCC AA/FS

3 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 103, a COMPASS placement score of 75 in Algebra, or a COMPASS placement score of 56 in College Algebra.

Comment: Students will need a scientific calculator for this course.

MATH 135 investigates linear, quadratic, polynomial, rational, exponential, logarithmic function and related topics. MATH 135 is the first part of the precalculus sequence in mathematics.

Upon successful completion of MATH 135, the student should be able to:

1. Apply definitions of functions, inverse functions, and composite functions.
2. Show familiarity with all principles involving linear functions.
3. Find roots, evaluate, sketch and solve inequalities involving polynomial functions.
4. Graph rational functions using the concepts of asymptotes.
5. Apply definitions and principles of logarithmic and exponential functions.
6. Use knowledge and techniques of this course in solving applied problems.

MATH 140 Precalculus: Trigonometry and Analytic Geometry (3) KCC AA/FS

3 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 135 or a COMPASS placement score of 71 in College Algebra.

Comment: A scientific calculator is required for MATH 140.

MATH 140 studies trigonometric functions, analytic geometry, polar coordinates, vectors, and related topics. This course is the second part of the precalculus sequence.

Upon successful completion of MATH 140, the student should be able to:

1. Solve problems in Plane Trigonometry.
2. Graph trigonometric functions and their inverses.
3. Relate vectors with trigonometric functions.
4. Simplify algebraic expressions involving complex numbers.
5. Relate functional and geometric properties of conic sections.
6. Use knowledge and techniques in this course in solving applied problems.

MATH 203 Calculus for Business and the Social Sciences (3) (Inactive)

3 hours lecture per week

MATH 203 covers the mathematics of finance - annuities, perpetuities, present value, derivatives, integrals, graphical analysis, and mathematical models as applied to business. MATH 203 also covers applications of the derivative to curve sketching and the solutions of optimization problems, and involves the algebra and geometry of linear, quadratic, polynomial, exponential, and logarithmic functions, including functions of more than one variable.

Upon successful completion of MATH 203, the student should be able to:

1. Apply the concepts of function, limits, and continuity to business and financial problems.
2. Compute the derivatives and integrals of power functions, exponential, logarithmic functions and any combination of these functions.
3. Apply the derivative to problems involving slopes, tangent lines, rates of changes, and optimization.
4. Apply the concepts of limits and derivatives to graphing.
5. Apply the derivative and integral in solving applied problems by using more than one variable.

MATH 205 Calculus I (4) KCC AA/FS

4 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 140 or a math placement recommendation of MATH 205.

Comment: Students will need a scientific calculator for MATH 205.

MATH 205 focuses on limits and continuity, techniques and applications of differentiation of algebraic and trigonometric functions, and an introduction to integration.

Upon successful completion of MATH 205 the student should be able to:

1. Apply the concept of limit.
2. Differentiate polynomial and trigonometric functions and sums, products, quotients, roots, and compositions of polynomial and trigonometric functions.
3. Use differential calculus to sketch curves and to solve applied problems.
4. Integrate functions by approximation and by use of antiderivatives.
5. Use integral calculus to determine area and to solve applied problems.

MATH 206 Calculus II (4) KCC AA/FS

4 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 205 or equivalent.

Comment: Students will need a scientific calculator for MATH 206.

MATH 206 is the second course in the calculus sequence, which focuses on techniques of integration and on integrals of specific functions and their applications. MATH 206 explores infinite series.

Upon successful completion of MATH 206 the student should be able to:

1. Differentiate and integrate elementary transcendental functions.
2. Integrate functions using special methods.
3. Apply L'Hospital's Rule and evaluate improper integrals.
4. Determine the convergence of infinite sequences and series and approximate functions with Taylor polynomials.
5. Use the techniques developed in this course to solve applied problems.

MATH 206L Calculus Computer Lab (3)

3 hours lab per week

Comment): A student may also register for MATH 206L if the student has completed MATH 206 with a "C" or higher grade, but has not successfully completed MATH 206L.

MATH 206L is an introduction to mathematics computer software for solving calculus problems, graphing functions, and gaining graphical and numerical comprehension of calculus concepts. No prior knowledge of computers is required.

Upon successful completion of MATH 206L the student should be able to:

1. Use symbolic mathematics software to find solutions of equations and systems of equations.
2. Use symbolic mathematics software to find first and second derivatives.
3. Use symbolic mathematics software to find estimates of function zeros using Newton's Method.

4. Use symbolic mathematics software to find definite and indefinite integrals.
5. Use symbolic mathematics software to find estimates of definite integrals using numerical methods.
6. Use symbolic mathematics software to find Taylor polynomials and estimate their remainders.
7. Use symbolic mathematics software to determine the convergence or divergence of infinite series.
8. Apply the fundamental calculus concepts of: limit of a function, derivative of a function, application of Newton's Method, definite integral, and numerical methods for estimating the definite integral.
9. Apply the fundamental calculus concepts of: convergence of Taylor polynomials and solutions of differential equations of the form $F'(x) = G(x,y)$.

MATH 231 Calculus III (4) KCC AA/FS

4 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MATH 206, or qualification for MATH 231 on the math placement test.

Comment: Students will need a scientific calculator for MATH 231.

MATH 231 prepares students for Calculus IV. Topics include differential calculus on functions of several variables, polar coordinates functions and vector valued functions.

Upon successful completion of MATH 231, the student should:

1. Use differential calculus on functions of several variables.
2. Differentiate functions of several variables and use the derivative to solve problems.
3. Explain what a limit is and the properties of limits of vector functions.
4. Describe the methods and logic of mathematics.

MATH 232 Calculus IV (4) KCC AA/FS

4 lecture hours per week

Prerequisite(s): A grade of "C" or higher in MATH 231 or qualification for MATH 232 on the math placement test.

Comment: Students will need a scientific calculator for MATH 232.

MATH 232 is the fourth course in the calculus sequence and focuses on multiple integrals, line and surface integrals and applications, and an introduction to ordinary differential equations.

Upon successful completion of MATH 232, the student should:

1. Use multivariable and basic differential equations calculus as a tool of mathematics.
2. Solve problems using multivariable calculus and differential equations.
3. Describe the methods and logic of mathematics.

MECHANICAL ENGINEERING

ME 213 Introduction to Engineering Design (3) KCC AA/DP

2 hours lecture, 3 hours lab per week

Prerequisite(s): A grade of "C" or higher in PHYS 170 or consent of the instructor.

Comment: Letter grade only. ME 213 may not be audited. ME 213 may not be taken credit/no credit. ME 213 is designed for pre-engineering students who intend to transfer to a four-year engineering program and major in Mechanical Engineering.

ME 213 is an introductory experience in communication, presentation, professional ethics, social responsibility, engineering economics, quality control, and computer-aided drafting. Teamwork and a project are required. The goal of the course is to learn the design process and associated skills in teamwork, communication, and computing, to recognize the role of fundamentals in design and problem solving, and to be exposed to different examples of engineering projects, disciplines, and careers.

Upon successful completion of ME 213, the student should be able to:

1. Use scientific knowledge to explore, compare, and analyze engineering design solutions.
2. Employ analytical reasoning as part of a team to identify engineering design problems, requirements, limitations, and goals.
3. Utilize computer-aided design (CAD) to evaluate prototype solutions and perform engineering design reviews.
4. Effectively communicate background research and design solutions via oral presentations and written reports.

MEDICAL ASSISTING

MEDA 101 Understanding the Ambulatory Care Patient (1)

1 hour lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Comment: Letter grade only. MEDA 101 may not be taken credit/no credit. MEDA 101 may not be audited. MEDA 101 was formerly a component of MEDA 100.

MEDA 101 is an introductory course that provides a knowledge base for the medical assistant's interaction with ambulatory care patients. It covers basic principles of psychology and human growth and development.

Upon successful completion of MEDA 101, the student should be able to:

1. Discuss the application of basic principles of psychology in dealing with patients of various backgrounds and medical conditions.
2. Describe possible ways of dealing with noncompliant patients.
3. Discuss stages of human growth and development in relation to medical conditions.
4. Explain variations in selected health conditions at different life stages.
5. Discuss the role of culture in health and wellness.
6. Discuss the role of family and support systems in health care among different cultures.

MEDA 102 Communication in the Medical Office (1)

1 hour lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Comment: Letter grade only. MEDA 102 may not be taken credit/no credit. MEDA 102 may not be audited. MEDA 102 was formerly a component of MEDA 100.

MEDA 102 is an introductory course that focuses on communication in the medical office/ambulatory care setting.

Upon successful completion of MEDA 102, the student should be able to:

1. Adapt communications to individual's ability to understand.
2. Communicate patient instructions clearly and effectively.
3. Use appropriate terminology in communicating with other health care team members.
4. Recognize and respond effectively to verbal, nonverbal, and written communications.
5. Use professional telephone technique.
6. Use electronic technology to receive, organize, prioritize, and transmit information.

MEDA 103 Math Applications in the Medical Office (1)

1 hour lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Comment: Letter grade only. MEDA 103 may not be taken credit/no credit. MEDA 103 may not be audited. MEDA 103 was formerly a component of MEDA 100.

MEDA 103 is an introductory course that focuses on applications of basic mathematical principles in the medical office/ambulatory care setting.

Upon successful completion of MEDA 103, the student should be able to:

1. Use applicable mathematical principles to solve problems in the medical office.
2. Convert measurements from one system to another.
3. Perform drug dosage calculations.

MEDA 104 Basic Nutrition for the Medical Assistant (1)

1 hour lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Comment: Letter grade only. MEDA 104 may not be audited. MEDA 104 may not be taken credit/no credit. MEDA 104 was formerly a component of MEDA 100.

MEDA 104 is an introductory course that identifies the relationship of food and nutrition to health. It covers the application of basic nutrition principles to personal well-being and the importance of nutrition in preventing chronic diseases.

Upon successful completion of MEDA 104, the student should be able to:

1. Identify nutrients and their functions.
2. Utilize the food pyramid and dietary guidelines in planning a healthy diet.
3. Explain the relationship between nutrition and chronic diseases.
4. Identify deceptive nutrition advertising.

MEDA 111 Medical Assisting Science I (4)

4 hours lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Comment: Letter grade only. MEDA 111 may not be audited. MEDA 111 may not be taken Credit/No Credit.

MEDA 111 covers basic concepts of human anatomy and physiology as well as medical terminology related to the body as a whole and to each major body system.

Upon successful completion of MEDA 111, the student should be able to:

1. Name and locate the parts and state the major functions of the human organ systems: integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, respiratory, digestive, urinary, and reproductive.
2. Define medical terms related to the body as a whole.
3. Define and use word parts to build medical terms.
4. Apply knowledge of word parts, analyze and define medical terms associated with the systems of the human body and related diagnostic, surgical, and treatment procedures and disease conditions.
5. Recognize and apply terminology pertaining to injuries and disease processes.

MEDA 121 Clinical Medical Assisting I (1)

1 hour lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Corequisite(s): MEDA 121L

Comment: Letter grade only. MEDA 121 may not be audited. MEDA 121 may not be taken credit/no credit. MEDA 121 was formerly a component of MEDA 120.

MEDA 121 provides principles of basic clinical care skills as an assistant to a physician in an ambulatory care facility setting.

Upon successful completion of MEDA 121, the student should be able to:

1. Explain basic ambulatory care concepts and principles in the performance of back office duties.
2. Discuss routine patient care/diagnostic procedures to assess the health status of patients.
3. Explain the role of the medical assistant in preparation of back office, equipment and supplies to facilitate the smooth flow of patients through the clinic and/or physician's office.
4. Discuss the role and responsibilities of the medical assistant in preparing the patient for specific examinations and medical procedures.
5. Discuss principles of aseptic technique and infection control.
6. Discuss the role of the medical assistant in assisting the physician to carry out specific examinations and procedures.
7. Describe procedures for screening and following up on patient test results.
8. Employ electronic media to access information about clinical medical assisting principles and methods.

MEDA 121L Clinical Medical Assisting Lab I (1)

3 hours lab per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Corequisite(s): MEDA 121

Comment: Letter grade only. MEDA 121L may not be audited. MEDA 121 may not be taken credit/no credit. MEDA 121L was formerly a component of MEDA 120L.

MEDAS 121L provides instruction and lab practice in preparing for and performing medical office procedures and diagnostic tests and follow-up care.

Upon successful completion of MEDA 121L, the student should be able to correctly:

1. Apply basic ambulatory care concepts and principles with entry-level proficiency in the performance of duties in the back office.
2. Demonstrate routine patient care procedures to assist the physician in the examining room.
3. Apply aseptic techniques and infection control in the back office.
4. Demonstrate sterilization/disinfection of instruments and supplies.
5. Assemble and record medical data from patients.
6. Prepare patients for exams and/or treatments.
7. Measure and record vital signs, height and weight.

MEDA 122 Clinical Medical Assisting II (1)

1 hour lecture per week

Prerequisite(s): A grade of "C" or higher in MEDA 121.

Corequisite(s): MEDA 122L.

Comment: Letter grade only. MEDA 122 may not be audited. MEDA 122 may not be taken credit/no credit. MEDA 122 was formerly a component of MEDA 120.

MEDA 122 prepares the student to carry out clinical care procedures as an assistant to a physician in an ambulatory care facility setting.

Upon successful completion of MEDA 122, the student should be able to:

1. Describe routine patient care/diagnostic procedures to assess the health status of patients including vision testing, hearing testing, electrocardiography.
2. Examine the role of the medical assistant in facilitating the smooth flow of patients through the clinic and/or physician's office.
3. Discuss the role and responsibilities of the medical assistant in preparing the patient for specific examinations and medical procedures.
4. Discuss the role of the medical assistant in assisting the physician to carry out specific examinations and procedures.
5. Explain the role of the medical assistant in screening and following up on patient test results.
6. Describe quality assurance practices applicable to the medical office.
7. Express the importance of radiation safety principles and practices in preparing patients for imaging and related procedures.
8. Use electronic media to access information about clinical medical assisting principles and methods.

MEDA 122L Clinical Medical Assisting Lab II (1)

3 hours lab per week

Prerequisite(s): A grade of "C" or higher in MEDA 121L.

Corequisite(s): MEDA 122.

Comment: Letter grade only. MEDA 122L may not be audited. MEDA 122L may not be taken credit/no credit. MEDA 122L was formerly a component of MEDA 120L.

MEDA 122L provides instruction and lab practice in preparing for and performing routine and specialty medical office procedures, diagnostic tests, in-office/ambulatory surgical procedures, and follow-up care.

Upon successful completion of MEDA 122L, the student should be able to correctly:

1. Demonstrate back office duties with entry-level proficiency.
2. Dramatize routine patient care procedures to assist the physician in the examining room in simulated lab situations.
3. Demonstrate screening and follow up procedures related to patient test results in simulated lab situations.
4. Demonstrate compliance with quality assurance practices applicable in the medical office.
5. Perform hearing and vision screening.
6. Perform single-channel or multi-channel electrocardiography.
7. Demonstrate instructing patients in follow-up care/procedures in simulated lab situations.

MEDA 143 Administrative Medical Assisting I (3)

6 hours lecture/lab per week

Prerequisite(s): Acceptance into the Medical Assisting program.

Comment: Letter grade only. MEDA 143 may not be taken credit/no credit. MEDA 143 may not be audited. MEDA 143 was

formerly a component of MEDA 140. Supplies required for MEDA 143 include a USB data storage device, printer paper, manila folder and optional 3-ring binder. Students should also have a medical dictionary. Approximate cost \$30.

MEDA 143 presents basic concepts and applications of computers and computer systems in administrative medical assisting practice. The course provides beginning instruction in administrative medical assisting practice and in the front office.

Upon successful completion of MEDA 143, the student should be able to:

1. Identify, describe, and use basic computer application programs used in medical assisting.
2. Accurately process and communicate information in a medical office using keyboarding, proofreading, and editing skills.
3. Perform basic administrative medical assisting functions.
4. Schedule, coordinate, and monitor appointments, inpatient admissions and outpatient procedures.
5. Input, obtain, and process accurate data for various medical office applications.
6. Demonstrate ergonomically correct "touch" keyboarding techniques with a minimum keyboarding rate of 30 gross words a minute with good accuracy.
7. Adhere to managed care policies and procedures.
8. Apply bookkeeping principles and manage accounts receivable.
9. Apply third-party payment guidelines.
10. Perform basic procedural and diagnostic coding.
11. Ethically handle confidential medical data.

MEDA 152 Medical Assisting Science II (4)

4 hours lecture per week

Prerequisite(s): Acceptance into the Medical Assisting program. A grade of "C" or higher in MEDA 111.

Comment: Letter grade only. MEDA 152 may not be audited. MEDA 152 may not be taken Credit/No Credit.

MEDA 152 covers basic concepts and characteristics of disease processes; etiology, methods of control, and development of selected diseases from each major body system and application of principles to the function of a medical practice. MEDA 152 also includes an overview of the broad scope of pharmacology, and a survey of medications commonly used in the prevention, diagnosis, and treatment of diseases.

Upon successful completion of MEDAS 152, the student should be able to:

1. Identify and discuss basic concepts, principles, and characteristics of disease processes.
2. Recognize and apply terminology pertaining to injuries and disease processes.
3. Identify and discuss the etiology of selected diseases from each of the major body systems.
4. Identify and discuss methods of external control and treatment of known diseases.
5. Apply knowledge of disease processes and conditions to the smoother functioning of a medical office or clinic.
6. Interpret abbreviations and symbols accurately as they relate to drug administration.
7. Discuss standards and legislation as they related to selected drugs.
8. Use appropriate references for obtaining drug information.
9. Identify drugs commonly used in the prevention, diagnosis, and treatment of disease
10. Discuss current status of pharmaceuticals commonly used in immunizations for the prevention of specific diseases.
11. Identify major drug classifications, and drugs within each classification, commonly used in treatment of specific disease conditions encountered in the medical office.
12. Cite specific action, side effects, and responsibilities related to use of all pharmaceuticals discussed in class.

MEDA 163 Administrative Medical Assisting II (3)

6 hours lecture/lab per week

Prerequisite(s): A grade of "C" or higher in MEDA 143.

Comment: Letter grade only. MEDA 163 may not be taken credit/no credit. MEDA 163 may not be audited. MEDA 163 was formerly a component of MEDA 140 and MEDA 140L. Supplies required include a USB data storage device, printer paper, manila folder and optional 3-ring binder. Students should also have a medical dictionary. Approximate cost \$30.

MEDA 163 provides further instruction in administrative medical assisting practice and the application of computers in medical assisting in the front office, administrative practice including transcription of medical reports and documentation, coding, and maintaining patient records and accounts.

Upon successful completion of MEDA 163, the student should be able to:

1. Accurately submit claims, obtain reimbursement, and monitor third-party reimbursement.

2. Perform procedural and diagnostic coding.
3. Manage accounts payable and process payroll.
4. Proficiently apply computer systems in maintaining patient records and accounts.
5. Apply knowledge of medical terminology and transcription skills in processing medical data.
6. Document and maintain accounting and banking records.
7. Develop and maintain fee schedules.
8. Manage renewals of business and professional insurance policies.
9. Manage personnel benefits and maintain records.
10. Perform marketing, financial, and strategic planning
11. Transcribe reports dealing with terminology, disease conditions, and procedures related to various body systems and medical specialties.
12. Apply spreadsheet and database management programs in a medical office administrative setting.
13. Proofread and edit medical documents.

MEDA 175 Administration of Medications (1)

4 hours lecture/lab per week for 8 weeks

Prerequisite(s): A grade of "C" or higher in MEDA 152 or program director consent.

Comment: Letter grade only. MEDA 175 may not be audited. MEDA 175 may not be taken credit/no credit. MEDA 175 was formerly PHRM 115.

MEDA 175 provides instruction in the application of basic concepts required for medication administration: choice of equipment, proper technique, hazards and complications, patient care; performance of intramuscular, subcutaneous, and intradermal injections; preparation and administration of oral medications; immunizations.

Upon successful completion of MEDA 175, the student should be able to:

1. Apply the basic concepts required for medication administration.
2. Solve conversion problems within and among the following systems: household, metric, and apothecary.
3. Interpret abbreviations and symbols accurately as they relate to drug administration.
4. Discuss legislation relating to drug administration.
5. Calculate pharmaceutical equations correctly.
6. Apply the specific rules of safe drug administration.
7. Prepare and administer oral, ophthalmic, otic, nasal, and parenteral preparations in simulated lab situations.

MEDA 201 Medical Law and Ethics (2)

2 hours lecture per week

Prerequisite(s): A grade of "C" in MEDA 121; a grade of "C" in MEDA 143.

Comment: Letter grade only. MEDA 201 may not be taken credit/no credit. MEDA 201 may not be audited.

MEDA 201 focuses on legal and ethical responsibilities in patient care and management: laws pertaining to medical practice and medical assistants, application of medical ethics in performance of duties.

Upon successful completion of MEDA 201, the student should be able to:

1. Correlate laws that affect medical practice and the practice of Medical Assistants.
2. Discuss basic concepts of medical ethics in relationships with physicians, patients and co-workers as applied to the performance of duties as a Medical Assistant.
3. Use electronic media to gain knowledge of basic concepts of laws and medical ethics in the practice of Medical Assistants.

MEDA 210 Medical Assisting Critique (1)

15 hours lecture total

Prerequisite(s): A grade of "C" or higher in MEDA 122; a grade of "C" or higher in MEDA 122L; a grade of "C" or higher in MEDA 152; a grade of "C" or higher in MEDA 163; a grade of "C" or higher in MEDA 175; a grade of "C" or higher in MEDA 201; and a grade of "C" or higher MLT 100; and consent of instructor.

Corequisite(s): MEDA 215.

Comment: Letter grade only. MEDA 210 may not be audited. MEDA 210 may not be taken credit/no credit.

MEDA 210 provides an analytical approach to the correlation of theory and learned skills to practical experience in the delivery of quality patient care in the ambulatory healthcare setting.

Upon successful completion of MEDA 210, the student should be able to:

1. Discuss knowledgeably the responsibilities of the Medical Assistant as a health care team member in the delivery of quality patient care.
2. Describe standards of performance of entry-level skills and proficiency in all aspects of a beginning professional medical assistant.
3. Correlate basic ambulatory patient care concepts and principles to analyze, synthesize, and evaluate patient situations in the externship experience.
4. Describe potential ethical and legal ramifications of both medical and economic aspects of patient management.
5. Discuss applicable laws, safety standards, record maintenance, quality patient care and education in regard to patient situations in the externship experience.
6. Effectively use electronic media to apply knowledge about medical assisting principles, practices, and methods.
7. Identify problem areas in clinical practice, discuss possible ways to solve them, and select the best one using problem-solving methods, effective communication skills, and active participation in class.
8. Perform satisfactorily in objective testing of in-depth knowledge of illness/wellness, medical care objectives and/or philosophies and the role of the Medical Assistant in procedures for diagnosis, examination, and treatment of the ambulatory patient.
9. Select and complete individual projects; seek out and pursue avenues for professional development.
10. Compile a procedure manual as a guide and reference for a medical office.
11. Review and prepare for certification as a Professional Medical Assistant.

MEDA 215 Externship (5)

225 total hours clinical experience

Prerequisite(s): A grade of "C" or higher in MEDA 122; a grade of "C" or higher in MEDA 122L; a grade of "C" or higher in MEDA 152; a grade of "C" or higher in MEDA 163; a grade of "C" or higher in MEDA 175; a grade of "C" or higher in MEDA 201; a grade of "C" or higher in MLT 100; and consent of instructor.

Corequisite(s): MEDA 210.

Comment: Letter grade only. MEDA 215 may not be audited. MEDA 215 may not be taken credit/no credit. Students are expected to provide their own uniforms, shoes, and stethoscope and to provide for their own transportation to and from clinical site.

MEDA 215 provides clinical experience for the development of professional characteristics as a practicing Medical Assistant.

Upon successful completion of MEDA 215, the student should be able to:

1. Function as a clinical professional and demonstrate professional characteristics expected of a beginning practicing Medical Assistant.
2. Apply basic ambulatory patient care concepts and principles with entry level proficiency in the performance of his/her duties in the administrative and clinical areas.
3. Perform routine patient care procedures to assist the physician in examination and treatment rooms.
4. Perform simple laboratory diagnostic tests to assist the physician in the health appraisal of patients.
5. Prepare the back office, equipment and supplies to facilitate the smooth flow of patients through the clinic and/or physician's office.
6. Perform routine front office procedures to assist the physician in the care (health appraisal) of patients.
7. Prepare the front office, equipment and supplies to facilitate the smooth functioning of this area.
8. Apply the working knowledge by which the law affects a medical practice and himself/herself specifically as a Medical Assistant.
9. Apply the basic concepts of medical ethics and economics in relationships with the physician, patients and co-workers in the performance of identified duties as a Medical Assistant.

MEDA 222 Advanced Clinical Medical Assisting (2)

4 hours lecture/lab per week

Prerequisite(s): Completion of Certificate of Achievement in Medical Assisting, or consent of program director.

Comment: Letter grade only. MEDA 222 may not be audited. MEDA 222 may not be taken credit/no credit.

By using lab simulation and role-playing of actual clinical situations students in MEDA 222 will problem solve, think analytically and modify care as it relates to observed responses and conditions presented.

Upon successful completion of MEDA 222, the student should be able to:

1. Demonstrate and evaluate health status appraisal of patients using prescribed medical office diagnostic tests and follow-up care.

2. Identify and problem-solve mechanical artifacts on ECG tracings.
3. Demonstrate and evaluate patient skills in basic principles of physical therapy.
4. Demonstrate coordination of patient preparation procedures with treatment modalities.
5. Demonstrate coordination of patient preparation procedures with diagnostic radiographic procedures.
6. Compare and contrast selected medical specialties and the role of the medical assistant in demonstrating and coordinating care.
7. Develop and present Patient education materials.
8. Locate, research and disseminate information on a community resource.

MEDA 271 Coding for the Physician's Office (5)

5 hours lecture per week

Prerequisite(s): Completion of Certificate of Achievement in Medical Assisting, or consent of program director.

Comment: Letter grade only. MEDA 271 may not be audited. MEDA 271 may not be taken credit/no credit.

MEDA 271 provides detailed instruction in the application of an internationally accepted set of codes for the specific description of any medical procedure to treat a condition or injury to substantiate claims for reimbursement from third-party payers.

Upon successful completion of MEDA 271, the student should be able to:

1. Correctly use Volumes I and II of the ICD-9-CM text
2. Discuss the format of the ICD-10 text and reasons for the new format.
3. Discuss the CPT-4 format, including section numbers and sequences, terminology and format.
4. Correctly use the CPT-4 index.
5. Discuss the three levels of HCPCS coding conventions and search for various HCPCS codes.
6. Use coding conventions for identifying and selecting the appropriate evaluation and management service.
7. Define key components and determine patient status.
8. Implement correctly the variety of evaluation and management documentation guidelines.
9. Schedule and perform a chart audit.
10. Discuss frequency, prospective versus retrospective, and sampling.
11. Describe the global surgical package concept and coding conventions.
12. Discuss starred, separate, and add-on procedure codes
13. Describe in detail CPT modifiers.
14. Apply a set of coding rules for surgery across all anatomical subsections of surgery codes.
15. Discuss procedures and techniques specific to the integument.
16. Describe procedure and coding guidelines for procedures and techniques specific to the musculoskeletal system.
17. Discuss procedure and coding explanations pertaining to the respiratory system.
18. Discuss coding challenges presented by cardiothoracic surgery of the heart, coronary arteries, and great vessels.
19. Correctly apply coding conventions unique to pacemaker and auto-defibrillator placement.
20. Describe and apply coding conventions applied to vascular surgery.
21. Discuss coding conventions applied to diagnostic tests, procedures, and endoscopies pertaining to the digestive system.
22. Discuss coding for procedures of the kidney, ureter, urinary bladder, and the male genitalia.
23. Describe coding conventions applied to gynecological procedures and obstetrical care.
24. Discuss coding procedures and techniques of the skull, meninges and the brain, spine and spinal cord, and the extracranial nerves, peripheral nerves and the autonomic nervous system.
25. Discuss procedures and coding explanations pertaining to the eye and auditory system.
26. Discuss the American Society of Anesthesiologists (ASA) relative values, anesthesia guidelines, modifiers, code organization and crosswalk.
27. Discuss radiological procedures and coding guidelines.
28. Discuss procedure and coding issues related to pathology and lab tests.
29. Discuss coding guidelines for consultations, emergency department services, critical care, preventive medicine, and home care.
30. Identify and select appropriate immunizations, therapeutic and diagnostic infusions, psychiatry, dialysis, gastroenterology codes, cardiovascular codes, physical medicine, and other special services.

MEDA 280 Medical Office Management (2)

2 hours lecture per week

Prerequisite(s): A grade of "C" or higher in MEDA 222 or consent of instructor.

Comment: Letter grade only. MEDA 280 may not be audited. MEDA 280 may not be taken credit/no credit.

MEDA 280 provides instruction in preparing for the roles of office manager and human resources representative of a medical office or

ambulatory care facility. It also provides a specialty career pathway open to program graduates, professionalism, continuing education, correlation of theory and practice.

Upon successful completion of MEDA 280, the student should be able to:

1. Identify preferred qualities and characteristics of a manager/leader and management styles.
2. Discuss benefits of a teamwork approach.
3. Describe appropriate evaluation tools for employees.
4. Recall and role-play methods of resolving conflict.
5. List methods of increasing productivity and efficient time management.
6. Discuss and recognize the impact of HIPAA's privacy policy in ambulatory care settings.
7. Describe the general concept, tools, purpose and benefit of marketing.
8. Define records management, financial management, facility and equipment management, and risk management.
9. Identify and select the appropriate qualities in the role of the human resources manager.
10. Identify methods of recruiting employees for a medical practice
11. Discuss and role-play the interview process.
12. Identify items to keep in an employee's personnel record.
13. List and define laws related to personnel management.
14. Identify and select appropriate responsibilities of the Medical Assistant with advanced skills as a health care team member in the delivery of quality patient care.
15. Identify and select appropriate standards of performance of a professional medical assistant with advanced clinical and administrative skills.
16. Describe and identify regulatory policies that affect specialized areas of administrative medical assisting.

MEDICAL LABORATORY TECHNICIAN

MLT 100 Introduction to the Clinical Laboratory (2)

4 hours lecture/lab per week

Prerequisite(s): Credit or concurrent enrollment in BIOL 130.

MLT 100 is an introduction to the field of medical technology, with instruction in basic laboratory skills including phlebotomy.

Upon successful completion MLT 100, the student should be able to:

1. Demonstrate knowledge of clinical laboratory organizations and the roles of various laboratory personnel within the organization.
2. Perform basic laboratory techniques.
3. Use basic laboratory instruments and equipment.
4. Demonstrate competence in obtaining blood specimens.
5. Demonstrate ability to effectively interact with patients, hospitals and laboratory personnel.
6. Describe quality control in the clinical laboratory.

MLT 100B Phlebotomy Practicum (1)

40 clinical hours

Prerequisite(s): Acceptance into the MLT program; credit or concurrent enrollment in MLT 100.

Comment: Letter grade only. MLT 100B not be taken for credit/no credit. MLT 100B not be audited. MLT 100B may not be repeated for additional credit.

MLT 100B is the clinical application of the skills and knowledge learned in MLT 100. Forty hours will be spent in an affiliated clinical laboratory collecting and processing specimens for the laboratory.

Upon successful completion of MLT 100B, the student should be able to:

1. Effectively select and utilize vacutainers, syringes and butterflies to obtain venous blood samples.
2. Perform a minimum of 50 successful, unaided venipunctures after choosing the appropriate supplies for each sample.
3. Perform a minimum of 5 successful, unaided finger sticks after choosing the appropriate supplies for each sample.
4. Explain and follow the basic rules and regulations essential for safe and accurate phlebotomy.
5. Process specimens accurately, according to the procedures set in the specific clinical laboratory.
6. Exhibit appropriate interpersonal skills with patients, coworkers and other health care personnel in person and on the telephone.

7. Explain the policies and use the procedures in the clinical laboratory to assure quality in the obtaining of blood specimens.
8. Exhibit a professional demeanor while performing phlebotomist duties.

MLT 107 Clinical Microbiology I (3)

6 hours lecture/lab per week

Prerequisite(s): Acceptance into to the MLT program or consent of MLT program director; a grade of "C" or higher in MLT 100 or consent of MLT program director; a grade of "C" or higher in MICR 130 or consent of MLT program director.

Comment: Letter grade only. MLT 107 may not be taken credit/no credit. MLT 107 may not be audited. MLT 107 may not be repeated for additional credit. Students will be expected to purchase latex or vinyl gloves for this course.

MLT 107 will provide the basic laboratory experience in Clinical Microbiology, including slide preparation, gram stain and isolating bacteria in order to identify the organisms.

Upon successful completion of MLT 107, the student should be able to:

1. Make smears of bacterial cultures, stain and identify the cellular characteristics of bacteria by color, shape and arrangement.
2. Streak a culture plate for isolation of bacteria and describe colonial morphology.
3. Explain the collection and proper handling of specimens received in a clinical microbiology lab and list pathogens and non-pathogens found in each specimen.
4. Perform laboratory exercises on selected bacterial organisms to define characteristic and biochemical reactions useful in identification of bacteria.
5. Identify the bacteria in an unknown specimen with 100% accuracy.
6. Utilize the safety precautions necessary in the Clinical Microbiology laboratory.

MLT 108 Hematology (5)

10 hours lecture/lab per week

Prerequisite(s): Acceptance into the MLT program or consent of MLT program director; a grade of "C" or higher in MLT 100 or consent of MLT program director.

Comment: Letter grade only. MLT 108 may not be taken credit/no credit. MLT 108 may not be audited. MLT 108 may not be repeated for additional credit.

MLT 108 will enable the students to learn the basics of human red and white blood cell structure and function and the theoretical aspects behind the enumeration and identification of the blood cells, as well as the diseases associated with these cells. The basic techniques of red and white blood cell counting and microscopic identification, as well as hemoglobin and Hematocrit determinations are included. The student will also learn specialized hematology techniques and instrumentation and coagulation procedures, as well as safety and quality control.

Upon successful completion of MLT 108, the student should be able to:

1. List the different types of human blood cells
2. Identify the following cells under the microscope:
 - a. Erythrocytes
 - b. Leukocytes
 - c. Thrombocytes
3. Describe the theory behind the following laboratory procedures and perform the testing procedures within + 2 standard deviations:
 - a. Hemoglobin
 - b. Hematocrit
 - c. Manual cell counting
 - d. Differential count
 - e. Sedimentation rate
4. List the normal values for the laboratory tests listed above
5. Define and identify the various inclusion bodies found in red and white blood cells and the conditions in which they occur.
6. Describe the clinical significance of and differences among the various hemoglobins
7. Summarize the facets of hemostasis and their interrelationship
8. Discuss the coagulation mechanism, its stages and each factor involved in coagulation
9. List and describe coagulation abnormalities and the laboratory results associated with each disorder.
10. Describe and discuss the fibrinolytic system
11. Identify microscopically the cellular picture and describe the following disease states:
 - a. Anemias (macrocytic, normocytic, microcytic, hemolytic)

- b. Polycythemias
 - c. Pancytopenias
 - d. Leukemias
 - e. Lymphomas
 - f. Multiple Myelomas
12. Operate and maintain equipment applicable to hematology and coagulation laboratories
 13. Perform the following laboratory procedures within + 2 standard deviations:
 14. Prothrombin time
 - a. Activated Partial Thromboplastin time
 - b. Thrombin time
 - c. Fibrinogen titer
 15. Perform the following tests with 100% accuracy
 - a. Sickle cell test
 - b. Fibrin split products
 - c. Clot retraction
 16. Perform the appropriate quality control procedures for Hematology
 17. Utilize the safety precautions necessary in the Hematology laboratory.

MLT 112 Clinical Biochemistry I (3) Spring

6 hours lecture/lab per week

Prerequisite(s): Credit or concurrent enrollment in CHEM 162/162L or consent of MLT program director; acceptance into the MLT program or consent of MLT program director.

Comment: Letter grade only. MLT 112 may not be taken credit/no credit. MLT 112 may not be audited.

MLT 112 introduces principles of clinical biochemistry pertaining to testing for chemical constituents in blood and body fluids. It covers general biochemistry of metabolism, carbohydrates, protein and enzymes. Student will practice techniques for spectrophotometry, glucose, protein, and protein fractionation and enzyme analysis.

Upon successful completion of MLT 112, the student should be able to:

1. Integrate knowledge of the theoretical principles of clinical biochemistry in laboratory diagnosis.
2. Describe the metabolic pathways basic to the physiology of the human body.
3. Describe the collection and handling of all clinical specimens to be processed for clinical chemistry.
4. Describe the function, structure, mode of action, and clinical significance of glucose, protein and protein fractions.
5. Describe the theory underlying laboratory procedures for glucose, glycosylated glucose, protein, albumin, and protein fractionation by electrophoresis and chromatography.
6. Correlate abnormalities of blood and urine chemistry associated with glucose and protein determinations.
7. Explain enzyme kinetics and relate the concept to laboratory testing for enzymes.
8. Calculate and prepare percent, normal and molar solutions and dilutions of concentrated solutions.
9. Calculate mean and standard deviation and apply basic statistics to quality control in the chemistry laboratory.
10. Use the appropriate statistical formula for determining reliability of clinical chemistry assays.
11. Perform the following manual clinical chemistry determinations on serum, plasma or urine within +/- two standard deviations of the stated value of the sample:
 - a. Glucose
 - b. Total Protein
 - c. Albumin
 - d. Protein Electrophoresis
 - e. Other protein fractionation
12. Operate and maintain according to standardized procedures and describe the principle of spectrophotometry.
13. Utilize and calibrate serological and volumetric pipettors and micropipettors.
14. Prepare written laboratory reports on each procedure performed and each instrument used.
15. Perform all tests utilizing appropriate safety measures as stated in safety manuals.
16. Organize their work in an orderly manner and maintain the laboratory area in a clean, working condition.

MLT 118 Body Fluids (1)

2 hours lecture/lab per week

Prerequisite(s): Acceptance into the MLT program or consent of MLT program director; a grade of "C" or higher in MLT 100 or consent of MLT program director; a grade of "C" or higher in MLT 108 or consent of MLT program director.

Comment: Letter grade only. MLT 118 may not be taken credit/no credit. MLT 118 may not be audited. MLT 118 may not be repeated for additional credit. Students will be expected to purchase latex or vinyl gloves for this MLT 118 course.

MLT 118 is the study of body fluids, other than blood. The course focuses on basic principles and procedures of the chemical and cellular analysis of various body fluids.

Upon successful completion of MLT 118, the student should be able to:

1. Discuss the basic principles underlying routine laboratory procedures in the analysis of various body fluids.
2. Describe normal and abnormal chemical and cellular constituents of various body fluids.
3. Perform chemical and macroscopic analysis of urine.
4. Identify normal and abnormal structures in the microscopic analysis of various body fluids.
5. Perform laboratory techniques utilizing necessary safety and quality control procedures

MLT 204 Immunohematology (2)

4 hours lecture/lab per week

Prerequisite(s): A grade of "C" or higher in MICR 160; a grade of "C" or higher in MLT 108 or consent of MLT program director.

MLT 204 will include the principles of Blood Banking, donor patient testing, and antibody identification in human blood. Inheritance and transfusion problems will be discussed, as well as disease states affected by antigen- antibody reactions on blood cells.

Upon successful completion of MLT 204, the student should be able to:

1. Describe the red cell antigens and the characteristics of their corresponding antibodies.
2. Discuss the causes of transfusion reactions, hemolytic disease of the newborn and hemolytic anemia.
3. Describe the clinical significance of antibody and antiglobulin testing.
4. List donor qualifications.
5. Accurately determine the ABO and RHH type of blood specimens and identify atypical antibodies.
6. Accurately perform crossmatch procedures with donor and patient blood specimens.

MLT 207 Clinical Microbiology II (3)

6 hours lecture/lab per week

Prerequisite(s): Acceptance into the MLT program or consent of MLT program director; a grade of "C" or higher in MLT 107 or consent of MLT program director.

Comment: Letter grade only. MLT 207 may not be taken credit/no credit. MLT 207 may not be audited. Students will be expected to purchase latex or vinyl gloves for this MLT 207 course.

MLT 207 includes the study of microorganisms and parasites as they relate to human disease. MLT 207 will provide the advanced laboratory experience in Clinical Microbiology, including a continuation of MLT 107 techniques and parasitology and mycology lab techniques.

Upon successful completion of MLT 207, the student should be able to:

1. Identify unknown cultures of medically significant bacteria to genus and species level and determine antibiotic susceptibility.
2. Describe the technique used to collect, handle, and/or preserve specimens received in the laboratory for parasite examination.
3. List and describe methods of concentrating stool specimens for parasites.
4. Identify the most commonly found parasites to genus and species upon observation of appropriate material.
5. List and describe: methods of preparing fungal smears and culturing fungi; collection and handling of specimens for fungal examination; and media used in the isolation and identification of fungi.
6. Utilize the safety precautions necessary in the Clinical Microbiology laboratory.

MLT 211 Clinical Microscopy (1)

2 hours lecture/lab per week

Prerequisite(s): A grade of "C" or higher in MLT 108; a grade of "C" or higher in MLT 118; a grade of "C" or higher in MLT 207 or permission of MLT program director.

MLT 211 will provide the student with additional experience in identifying microscopic elements in blood and body fluids prior to participating in the clinical rotations.

Upon successful completion of MLT 211, the student should be able to:

1. Identify the parts of a microscope and perform preventative maintenance and make minor repairs.
2. Identify Erythrocytes, Leukocytes, Thrombocytes, urinary casts, urinary crystals, bacteria, yeast and parasites under the microscope with at least 90 percent accuracy.
3. Perform the appropriate quality control and safety procedures for analysis of blood and body fluids.

MLT 212 Clinical Biochemistry II (4)

8 hours lecture/lab per week

Prerequisite(s): Acceptance into the MLT program or consent of MLT program director; a grade of "C" or higher in MLT 112 or consent of MLT program director.

Comment: Letter grade only. MLT 212 may not be taken credit/no credit. MLT 212 may not be audited.

MLT 212 covers the principles of clinical biochemistry as it pertains to testing for chemical constituents in blood and body fluids. This advanced level course will include lipid chemistry, acid-base balance, diagnostic enzymes, endocrinology, chemistry of body systems instrumentation and recent advances in clinical chemistry. The student will learn the techniques for analyzing blood and body fluids for diagnosis of various disease states by manual and automated methods.

Upon successful completion of MLT 212, the student should be able to:

1. Describe the function, structure, mode of action and clinical significance of each of the following chemical substances: Electrolytes, Blood Gases, non-protein nitrogen, Lipids, Clinically significant enzymes, Hormones - steroid, protein & peptide
2. Describe the theory behind the preceding laboratory procedures and list the normal values associated with each.
3. Correlate abnormalities of blood and urine chemistry associated with: altered acid base balance, kidney disease, liver disease, heart disease, neurological system disorders, endocrine and reproductive system disorders, bone and muscle disease, neoplasms
4. Describe the mode of action, clinical significance and methods for determining therapeutic drugs and drugs of abuse.
5. List and describe tumor markers found in blood and body fluids.
6. List the substances measured to determine fetal maturity and the clinical significance of each test.
7. Perform the following manual clinical chemistry determinations on serum, plasma or urine within +/- two standard deviations of the stated value of the sample: Cholesterol, Triglyceride & HDL, AST, ALT, ALP, CK, LD, Amylase and lipase, csalicylate, Electrolytes, Immunoassay
8. Operate and maintain according to standardized procedures and describe the principles of the following instruments: Ion selective electrode, Atac 2000, Pointe 180, Gilford Stasar, Ortho Vitros II, Dade Dimension
9. Prepare written laboratory reports on each procedure performed and each instrument used.
10. Perform all tests utilizing appropriate safety measures as stated in safety manuals.
11. Organize their work in an orderly manner and maintain the laboratory area in clean, working condition.

MLT 240 Seminar (1) Spring II

Prerequisite(s): MLT 108; MLT 118; MLT 204; MLT 207; MLT 211; MLT 212; and consent of MLT program director.

Corequisite(s): MLT 242B; MLT 242C; MLT 242D; MLT242E.

Comment: Letter grade only. MLT 240 may not be taken for credit/no credit. MLT 240 may not be audited.

MLT 240 is a seminar in which students discuss clinical experiences and other topics related to clinical laboratory medicine.

Upon successful completion of MLT 240, the student should be able to:

1. Think critically about the clinical laboratory as a career choice
2. Communicate ideas relevant to laboratory medicine to his/her peers
3. Develop skills for lifelong learning
4. Correctly answer at least 70% of the questions asked on a comprehensive medical laboratory technician exam.
5. Present a two-hour seminar for his/her peers on a topic relevant to laboratory medicine as a career choice.
6. Prepare a resume for obtaining a position in a clinical laboratory.
7. Describe the basic requirements for a successful job interview.

MLT 242B Clinical Rotation II – Blood Bank (2) Spring II

100 hours total

Prerequisite(s): MLT 204 with grade of "C" or higher or consent of MLT Program Director.

Corequisite(s): MLT 240.

Comment: Letter grade only. MLT 242B may not be taken for credit/no credit. MLT 242B may not be audited. MLT 242B is offered in the Spring semester only.

MLT 242B is the application of knowledge and skills learned in MLT 204. The work is performed in affiliated clinical laboratories.

Upon successful completion of MLT 242B, the student should be able to:

1. Transfer knowledge and skills learned in MLT 204 to the clinical laboratory.
2. Interact effectively with patients and laboratory personnel.

MLT 242C Clinical Rotation II – Chemistry (5) Spring II

240 total hours

Prerequisite(s): A grade of "C" or higher in MLT 112; a grade of "C" or higher in MLT 212 or consent of MLT program director.

Corequisite(s): MLT 240.

Comment: Letter grade only. MLT 242C may not be taken for credit/no credit. MLT 242C may not be audited. MLT 242C is offered in the Spring semester only.

MLT 242C is the application of knowledge and skills learned in MLT 112 and MLT 212. The work is performed in affiliated clinical laboratories.

Upon successful completion of MLT 242C, the student should be able to:

1. Transfer knowledge and skills learned in MLT 112 AND MLT 212 to the clinical laboratory.
2. Interact effectively with patients and laboratory personnel.

MLT 242D Clinical Rotation II–Microbiology (5) Spring II

240 total hours

Prerequisite(s): A grade of "C" or higher in MLT 107; a grade of "C" or higher in MLT 207 or consent of MLT program director.

Corequisite(s): MLT 240.

Comment: Letter grade only. MLT 242D may not be taken for credit/no credit. MLT 242D may not be audited. MLT 242D is offered in the Spring semester only.

MLT 242D is the application of knowledge and skills learned in MLT 107 and MLT 207. The work is performed in affiliated clinical laboratories.

Upon successful completion of MLT 242D, the student should be able to:

1. Transfer knowledge and skills learned in MLT 107 AND MLT 207 to the clinical laboratory.
2. Interact effectively with patients and laboratory personnel.

MLT 242E Clinical Rotation II – Hematology (4) Spring II

200 total hours

Prerequisite(s): A grade of "C" or higher in MLT 108; a grade of "C" or higher in MLT 118; a grade of "C" or higher in MLT 211 or consent of MLT program director.

Corequisite(s): MLT 240.

Comment: Letter grade only. MLT 242E may not be taken for credit/no credit. MLT 242E may not be audited. MLT 242E is offered in the Spring semester only.

MLT 242E is the application of knowledge and skills learned in MLT 108, MLT 118 and MLT 211. The work is performed in affiliated clinical laboratories.

Upon successful completion of MLT 242E, the student should be able to:

1. Transfer knowledge and skills learned in MLT 108, MLT 118 and MLT 211 to the clinical laboratory.
2. Interact effectively with patients and laboratory personnel

METEOROLOGY

MET 101 Introduction to Meteorology (3) KCC AA/DP (Inactive)

3 hours lecture per week

Comment: MET 101 may not be audited. MET 101 is currently inactive.

MET 101 is an introductory course intended for non science majors, prospective science teachers, and prospective science majors. This course will include an overview of basic atmospheric physics, sun-Earth-atmosphere interrelationships, pollution, major weather systems, weather forecasting, and Hawai'i weather.

Upon successful completion of MET 101, the student should be able to:

1. Identify the physical processes shaping the weather.
2. Apply scientific systems of measurement to describe natural phenomena.
3. Use and summarize weather patterns on meteorological charts.
4. Evaluate and use computer generated data to explain weather phenomena.
5. Critique problems within the framework of the course and communicate this knowledge in oral and written form.

MET 101L Introduction to Meteorology Lab (1) KCC AA/DY (Inactive)

3 hours lab per week

Prerequisite(s): Credit or concurrent enrollment in MET 101.

Comment: MET 101L may not be audited. MET 101 is currently inactive.

MET 101L is an introductory course intended for non science majors and prospective science teachers. This course involves exercises with meteorological data and measurement systems with particular focus on the characteristics of Hawaiian winds, temperatures, and rainfall.

Upon successful completion of MET 101L, the student should be able to:

1. Describe the components and processes of resulting weather patterns in the atmosphere.
2. Interpret the components of weather maps, and forecast weather.
3. Apply the scientific method and theories and concepts of meteorology to explain major weather systems.
4. Describe and explain weather phenomena typical and atypical to Hawaiian weather.
5. Explain critically the relationship between humans and the atmospheric environment.

MICROBIOLOGY

MICR 130 General Microbiology (3) KCC AA/DB and KCC AS/NS

3 hours lecture per week

Recommended Preparation: MATH 25; CHEM 100, CHEM 151, CHEM 161 or BIOC 241.

MICR 130 covers the fundamentals of microbiology with an emphasis on the biology of microorganisms and a study of how microbes affect people, property and the environment. Broad aspects of biochemistry, genetics, molecular biology, physiology, host-parasite relationships, infectious diseases, immunology, public health, epidemiology, food microbiology, and environmental microbiology will be covered.

Upon successful completion of MICR 130, the student should be able to:

1. Describe the organization of life at the cellular and subcellular levels.
2. Describe the main characteristics of bacteria such as their morphology, growth, reproduction and classification.
3. Describe in general terms, the fundamental biochemistry of bacterial metabolism and compare it to eucaryotic cell metabolism.
4. Describe the basic principles of molecular genetics as they relate to cell division, mutation, genetic engineering, bacterial virulence, and antibiotic resistance.
5. Describe the fundamental principles of the host-parasite relationship both in health and in disease.
6. Describe the components of the human immune system and evaluate how these components interact to generate an immune response.

7. Express and describe the growth characteristics of bacterial culture logically and in mathematical terms.
8. Classify and describe the major, common infectious diseases of humans.
9. Describe the methods of controlling microbes that are used to prevent disease transmission, food spoilage, and the destruction of other items of commercial importance.
10. Read and critique microbiology articles in the popular press and in professional health science journals.

MICR 140 General Microbiology Laboratory (2) KCC AA/DY and KCC AS/NS

4 hours lecture/lab per week

Prerequisite(s): Credit or concurrent enrollment in MICR 130.

Recommended Preparation: MATH 25.

MICR 140 covers the fundamental laboratory aspects of microbiology with a public health and medical emphasis.

Upon successful completion of MICR 140, the student should be able to:

1. Accurately use various measuring methods and instruments, the metric system and scientific notation in routine laboratory exercises and experiments.
2. Effectively use and properly care for the compound microscope, including the oil immersion lens, in laboratory exercises and experiments.
3. Accurately prepare, examine and interpret various stained slide specimens including gram stained, capsule stained, endospore stained and flagella stained specimens.
4. Demonstrate and properly execute aseptic technique while handling bacterial cultures and infectious specimens.
5. Evaluate the ubiquity of microbes as part of our normal flora and as present in the environment.
6. Demonstrate, evaluate and rationalize the principles and the techniques used to control microorganisms such as antibiotics, preservatives and the chemical and physical disinfecting and sterilizing agents.
7. Enumerate and evaluate the bacteria in biological, food, water and environmental samples and mathematically project the growth characteristics of these bacteria.
8. Demonstrate, evaluate and predict the effect of different habits and personal hygiene practices on human normal flora and on pathogenic microbes.
9. Demonstrate and evaluate the nutritional requirements and characteristics of the various medically important bacteria.
10. Demonstrate the ability to isolate, maintain and identify common bacteria.

MICR 161 Immunology and Protein Chemistry (2) KCC AA/DY

4 hours lecture/lab per week

Prerequisite(s): Credit or concurrent enrollment in MICR 130 or BIOL 171; credit or concurrent enrollment in MICR 140, or MLT 107, or BIOL 171L; credit or concurrent enrollment in CHEM 161; credit or concurrent enrollment in CHEM 161L.

MICR 161 lecture/laboratory course covers the fundamental aspects of both immunology and protein chemistry as it is performed in clinical and biotechnology laboratories.

Upon successful completion of MICR 161, the student should be able to:

1. Describe the structure and function of the human immune system and its cellular and molecular components.
2. Describe the structure and chemistry of proteins, with special emphasis on the immunoglobulins.
3. Describe the principles underlying antigen antibody reactions.
4. Demonstrate proficiency in performing a variety of immunoassays including agglutination, precipitation, ELISA, and fluorescent antibody procedures.
5. Demonstrate proficiency in performing a variety of immunoassays including agglutination, precipitation, ELISA, and fluorescent antibody procedures.
6. Explain the principles of electrophoresis and perform various electrophoretic separations.
7. Explain the principles and perform fundamental protein fractionation, separation and purification techniques such as salt fractionation, size exclusion chromatography and ion exchange chromatography.
8. Describe the principles underlying immunization strategies particularly as they relate to the production of monoclonal antibodies.
9. Describe the principles involved in developing screening assays for monoclonal antibody production; then, coat plates with candidate antigens and perform the assays.

MICR 230 Molecular Biology (3) KCC AA/DB

6 hours lecture/lab per week

Prerequisites (s): Credit or concurrent enrollment in MICR 130, MICR 135 or BIOL 171; credit or concurrent enrollment in MICR 140, MLT 107 or BIOL 171L; credit or concurrent enrollment in CHEM 151 or higher level chemistry course; credit or concurrent enrollment in CHEM 151L or higher level chemistry lab course.

Comment: The research-intensive nature of this course limits student enrollment to two attempts of the course. MICR 230 may not be audited. MICR 230 may be taken for a letter grade or credit/no credit only. MICR 230 is cross-listed with BIOL 275L.

MICR 230 serves as an introduction into the world of molecular biology with particular emphasis on human cancer, recombinant DNA techniques and microbial gene expression. Fundamental concepts covered will include: microbial manipulation, genetic manipulation, biomolecule isolation/characterization and biotechnology methodology.

Upon successful completion of MICR 230, the student should be able to:

1. Describe the structure of proteins, nucleic acids and macromolecular complexes.
2. Describe the function of nucleic acids, proteins and macromolecules in DNA replication, transcription, translation, mutagenesis and DNA repair.
3. Describe the regulation of gene activity in prokaryotes and eukaryotes.
4. Describe basic principles and techniques of molecular biology including the use of plasmids and transposons to generate recombinant DNA.
5. Prepare, sterilize and dispense the basic types of media used for the cultivation of bacteria.
6. Operate all the basic equipment of a molecular biology laboratory, including but not limited to large autoclaves and bench top autoclaves, water distillation apparatus and biological safety cabinets.
7. Operate all the basic equipment of a molecular biology laboratory, including but not limited to spectrophotometers and ELISA readers, electrophoresis equipment, centrifuges and microcentrifuges.
8. Perform agarose gel electrophoresis.
9. Isolate and quantitate chromosomal and plasmid DNA from bacteria.
10. Perform and analyze restriction enzyme digestions of DNA.
11. Perform polymerase chain reactions under a variety of conditions.
12. Analyze DNA and amino acid sequence data by searching sequence data bases.
13. Identify, characterize and describe the molecular and cellular changes that occur in cancer cells.
14. Describe and explain the roles of oncogenes and tumor suppressor genes in carcinogenesis.

MICR 240 Cell Biology and Tissue Culture (2) KCC AA/DY

4 hours lecture/lab per week

Prerequisite(s): MICR 130 or MICR 135 or BIOL 171; MICR 140 or MLT 107 or BIOL 171L; CHEM 151/151L or higher level chemistry course with lab; or instructor's consent.

Comment: MICR 240 is cross-listed as BIOL 275L.

MICR 240 covers cell biology and the essential principles important to the cultivation and study of cells in tissue culture. Through lectures and laboratory experiments students will acquire a fundamental understanding of the biochemistry and molecular biology of the cell. Students will also acquire competence in tissue culture and experience with modern advances in biotechnology and recombinant DNA technology.

Upon successful completion of MICR 240 the student should be able to:

1. Prepare media and buffers needed for the culture of animal, plant and microalgae cells.
2. Demonstrate proficiency in the specialized sterilization and quality control procedures used in a tissue culture laboratory.
3. Demonstrate proficiency in routine cell culture protocols such as feeding schedules and medium supplements, subcultivation procedures, cell enumeration and viability testing, cryopreservation, and the detection and disposition of contaminated cultures.
4. Demonstrate knowledge of the basic principles of protein chemistry by applying these principles in the designing and reporting of experiments utilizing enzymatic reactions, electrophoresis and immunoassays.
5. Demonstrate knowledge of the basic principles of DNA structure, function, and chemistry by applying these principles in the designing and reporting of experiments utilizing DNA extraction and purification, electrophoresis, restriction enzyme analysis, DNA amplification, sequencing, and sequence analysis using standard bioinformatics databases and analysis protocols.
6. Describe in detail the organization of life at the cellular and subcellular levels.
7. Describe the structure and function of biological membranes and demonstrate an understanding of the processes which occur at the cell surface.
8. Describe in detailed and specific terms the fundamental catabolic and anabolic metabolic processes that occur at the cellular level.
9. Describe and experimentally manipulate the cytoskeleton particularly as it relates to intracellular traffic, cytokinesis and cell motility.
10. Describe and experimentally manipulate the basic processes involved in cell signaling and the cell cycle and define the role

of these processes in cell differentiation and in cancer.

11. Describe the theories explaining the development of eukaryotes and the evolution of multicellular organisms.
12. Describe and debate the ethical issues surrounding existing and proposed research and applications using living cells.

MOBILE INTENSIVE CARE TECHNICIAN

MICT 150 Pre-Hospital Assessment and Treatment I (12)

8 hours lecture, 4 hours lecture/lab, 6 hours lab per week

Prerequisite(s): Acceptance into the MICT program; completion of a State of Hawai'i approved Emergency Medical Technician program; State licensure at the EMT level.

Comment: Letter grade only. MICT 150 may not be audited. MICT 150 may not be taken credit/no credit. Students are required to have a laptop computer.

MICT 150 is the theory and laboratory practice of advanced life support knowledge and skills used in the assessment and treatment of adult and pediatric patients with medical and trauma conditions requiring pre-hospital emergency care.

Upon successful completion of MICT 150, the student should be able to:

1. Improve knowledge and skills obtained at the EMT level to refine patient assessment, including taking the patient's history and performing a physical examination to assess illness or degree of injury in a multicultural environment.
2. Safely and accurately administer medications.
3. Explain and demonstrate the initiation and continuation of advanced life support care under medical control, including recognition of presenting symptoms and initiation of appropriate invasive and non-invasive treatment for surgical, medical, pediatric, obstetric and psychiatric emergencies, and airway and respiratory problems.
4. Safely and accurately perform in a non-patient care situation including designated advanced life support measures.

MICT 160 Pre-Hospital Assessment and Treatment II (5)

8 hours lecture, 6 hours lab per week for 8 weeks

Prerequisite(s): A grade of "C" or higher in MICT 150; acceptance into the MICT program; completion of a State of Hawai'i approved Emergency Medical Technician program; State licensure at the EMT level.

Comment: Letter grade only. MICT 160 may not be audited. MICT 160 may not be taken credit/no credit.

MICT 160 is the theory and laboratory practice of advanced life support skills in assessment and treatment of patients with cardiac conditions that require pre-hospital emergency care.

Upon successful completion of MICT 160, the student should be able to:

1. Describe detailed anatomy and physiology of the cardiovascular systems.
2. Recognize normal and abnormal cardiac rhythms, including life threatening arrhythmias and relate to cardiac output.
3. Recognize and interpret normal and abnormal 12-lead EKG's and correlate its clinical relevance.
4. Describe specific treatment of arrhythmias according to approved standing orders for Hawaii's MICTs.
5. Perform advanced cardiac life support skills.

MICT 200 Advanced Pre-Hospital Assessment and Treatment (5)

6 hours lecture, 4.5 hours lab per week for 10 weeks

Prerequisite(s): A grade of "C" or higher in MICT 160; acceptance into the MICT program; completion of a State of Hawai'i approved Emergency Medical Technician program; State licensure at the EMT level.

Comment: Letter grade only. MICT 200 may not be audited. MICT 200 may not be taken credit/no credit. ACLS, PALS, AMLS and PHTLS WRITTEN must be passed at 84% in order to complete MICT 200.

MICT 200 is the theory and laboratory practice of additional advanced medical, trauma, cardiac life support in the pre-hospital emergency environment.

Upon successful completion of MICT 200, the student should be able to:

1. Complete the Pediatric Advanced Life Support and the Advanced Cardiac Life Support-Provider courses according to standards set by the American Heart Association.
2. Complete the Advanced Medical Life Support and Pre-Hospital Trauma Life Support-Provider courses according to standards set by the National Association of Emergency Medical Technicians.

3. Recognize signs and symptoms, and perform medical management of various types of burns and chemical, biological, nuclear, radiological and environmental emergencies in the pre-hospital environment.
4. Perform, in the non-patient care situation, all skills required for functioning as a Mobile Intensive Care Technician (MICT).

MICT 301 Pre-Hospital Assessment and Treatment Clinical Experience (4)

18 hours clinical experience per week for 10 weeks

Prerequisite(s): A grade of "C" or higher in MICT 200; acceptance into the MICT program; completion of a State of Hawai'i approved Emergency Medical Technician program; State licensure at the EMT level.

Comment: Mandatory credit/no credit grading. MICT 301 may not be audited. MICT 301 may not be taken for a letter grade.

MICT 301 provides an opportunity for hands-on skills experience in basic and advanced life support at selected clinical facilities, includes major hospitals and ambulances. During this time the students develop clinical and interpersonal skills. They also develop their written, verbal and non-verbal communication skills. The health care culture and their professional behavior are nurtured through this clinical exposure.

Upon successful completion of MICT 301, the student should be able to:

1. Safely and accurately perform basic and advanced life support procedures, under direct supervision in a hospital or ambulance setting.
2. Correlate the clinical and theoretical aspects of selected patient situations through a series of case reports.

MICT 302 Pre-Hospital Assessment and Treatment Internship I (4)

1 hour lecture, 39 hours ambulance internship per week for 4 weeks

Prerequisite(s): A grade of "C" or higher in MICT 200; a grade of "C" or higher in MICT 301; acceptance into the MICT program; completion of a State of Hawai'i approved Emergency Medical Technician program; State licensure at the EMT level.

Comment: Mandatory credit/no credit grading. MICT 302 may not be audited. MICT 302 may not be taken for a letter grade.

MICT 302 provides the initial experience as a MICT intern on an advanced life support emergency ambulance. MICT 302 includes rotation one of the required five rotations. Each student is assigned one on one with a preceptor.

Upon successful completion of MICT 302, the student should be able to:

1. Safely and accurately perform in the emergency situation, at an introductory level, all advanced life support procedures as listed in the Board of Medical Examiners Rules for Emergency Ambulance Personnel.
2. Exercise personal judgment in case of interruption in medical direction caused by communication failure or in cases of immediate life threatening conditions; provide such emergency care as has been specifically authorized by approved standing orders.

MICT 350 Pre-Hospital Assessment and Treatment Internship II (14)

1 hour lecture, 39 hours ambulance experience per week

Prerequisite(s): A grade of "C" or higher in MICT 302; acceptance into the MICT program; completion of a State of Hawai'i approved Emergency Medical Technician program; State licensure at the EMT level.

Comment: Mandatory credit/no credit grading. MICT 350 may not be audited. MICT 350 may not be taken for a letter grade.

MICT 350 is an internship experience on selected advanced life support ambulances. Each student is assigned one on one with a preceptor and monitored by an instructor.

Upon successful completion of MICT 350, the student should be able to:

1. Safely and accurately perform in the emergency situation, at an introductory level, all advanced life support procedures as listed in the Board of Medical Examiners Rules for Emergency Ambulance Personnel.
2. Exercise personal judgment in case of interruption in medical direction caused by communication failure or in cases of immediate life threatening conditions; provide such emergency care as has been specifically authorized by approved standing orders.

MUSIC

MUS 106 Introduction to Music Literature (3) KCC AA/DH and KCC AS/AH

3 hours lecture per week

MUS 106 introduces students to western music literature with an emphasis on developing listening skills. Through listening and classroom critiques and analysis, all types of music are surveyed from Gregorian Chant to contemporary genres. Attendance at three (3) varying concerts is required.

Upon successful completion of MUS 106, the student should be able to:

1. Identify masterpieces of classical music repertoire.
2. Distinguish the salient compositional characteristics between several stylistic periods in music/art history including representative composers from each period which help place unfamiliar repertoire into familiar periods.
3. Contrast/compare music of any type (i.e. classical, ethnic, popular, seasonal) for texture, rhythm, form, melodic contour, harmonic orientation and time of composition.
4. Contrast/compare the live performances seen during the semester.
5. Define the elements that make up classical performance tradition and etiquette.

MUS 107 Music in World Cultures (3) KCC AA/FGC and KCC AS/AH

3 hours lecture per week

MUS 107 is an introduction to the field of ethnomusicology in which historical, religious, social, and political aspects of society are studied in relationship to its music traditions and culture. In addition to these aspects, the musical elements of each culture are analyzed for the types of instruments, form/structure, context, activities, and music aesthetics.

Upon successful completion of MUS 107, the student should be able to:

1. Describe the role of music in the different cultures of Asia, Southeast Asia, Africa and the Americas.
2. Describe the distinctive aural features and music aesthetics of a music culture.
3. Describe the historical, religious, social and political aspects of a society that contribute to the development of a music culture.
4. Identify the areas of those music cultures studied.
5. Describe the validity of other music traditions.
6. Contrast/compare your own music traditions within the broader context of other music traditions.

MUS 108 Fundamentals of Western Music (3) KCC AA/DA and KCC AS/AH

3 hours lecture per week

MUS 108 enables students to learn how to read and write music. Notational principles will be learned as a mode of communication. The roles of the composer, performer, and listener will be explored.

Upon successful completion of MUS 108, the student should be able to:

1. Identify and write the basic components of Western music notation: major, minor, and chromatic scales, key signatures, intervals, chords and chord symbols, and chord progressions using primary chords I, IV, and V7.
2. Notate and read basic melodic and rhythmic patterns in both simple and compound meters.
3. Write lyrics that correspond appropriately to natural accents of rhythmic values and patterns studied in class.
4. Write examples of possible basic harmonization for simple melodies.
5. Define the roles of composer, performer, and listener.
6. Identify aurally those melodic intervals studied in class.
7. Write major and minor triads in root position from any given note.
8. Play the piano functionally: play basic scales and arpeggios, chords and chord progressions, and beginning-level pieces studied in class.
9. Compose a short song in lead-sheet format, and perform it for the class.

MUS 114 College Chorus (2) KCC AA/DA

4 hours lecture/lab per week

Comment: MUS 114 is repeatable for a maximum of six credits.

MUS 114 is a performance-orientated course for all students interested in singing in a large ensemble. The selected repertoire is drawn from a range of classical, popular (jazz, musical theater), and Polynesian/ethnic choral literature. Rehearsal and performing practices

as well as basic music reading are included in the course of study. An extra-curricular concert is scheduled at the end of the semester. Previous choral experience is not required.

Upon successful completion of MUS 114, the student should be able to:

1. Interpret and perform basic rhythmic and sight-reading skills.
2. Apply the principles of ensemble singing through rehearsals and performances.
3. Perform the chosen repertoire with stylistic and musical accuracy, and musicality.
4. Identify and resolve the problems of performance in a variety of physical settings.
5. Apply performance etiquette.

MUS 121B Voice Class 1 (2) KCC AA/DA

1 hour lecture, 2 hours lecture/lab per week.

Prerequisite(s): Ability to carry a tune on pitch.

MUS 121B is the first of a three-semester sequence in learning solo singing skills. Concepts and skills introduced in the class include proper breath control and support, developing and discovering vocal production and potential, basic musicianship, song interpretation, and the basic principles of performing.

Upon successful completion of MUS 121B, the student should be able to:

1. Apply the principles of tone production, efficient utilization of the breathing apparatus, posture and body awareness, interpretation, and artistic qualities through the performance of traditional song repertoire.
2. Identify the vocal and music requirements in singing classical repertoire.
3. Perform a series of vocal solos applying the vocal techniques/concepts demonstrated in class.
4. Recognize and interpret basic music notation concepts.
5. Demonstrate performance etiquette as a performer and an audience member.

MUS 121C Class Piano I (2) KCC AA/DA

1 hour lecture, 2 hours lecture/lab per week

MUS 121C introduces concepts of learning how to play the piano, and is the first of a multi-course/multi-path sequence. Basic principles of performance will be explored, and students will play on both digital and acoustic pianos in the electric piano lab. Practice facilities are available on weekdays.

Upon successful completion of MUS 121C, the student should be able to:

1. Play the chromatic scale in both contrary and parallel motion, three octaves with both hands.
2. Play all major scales and arpeggios, one octave with both hands.
3. Play and demonstrate at least three different articulation styles: legato, staccato, and marcato.
4. Demonstrate the application of wrist rotation coupled with varied arm weight to achieve greater dynamic contrast, and play using a variety of the following dynamic levels: pp, p, mp, mf, f, ff.
5. Identify major key signatures by observing the sharps or flats in a given key signature.
6. Build major and minor triads in root position from any given point.
7. Play simple songs from first-level literature.
8. Mind-map, then color-map recital repertoire with colors and shapes of phrases, and then perform two of those selections by memory.

MUS 121D Guitar 1 (2) KCC AA/DA

1 hour lecture, 2 hours lecture/ lab per week

Comment: Letter grade and credit/no credit only. MUS 121D may not be audited. Each student must supply their own acoustic guitar (classical or steel string).

MUS 121D introduces the student to the basic principles of playing the acoustic guitar. The course provides a comprehensive study of the rudiments of music, guitar notations, finger style techniques, small ensemble literature, solo playing and accompaniment style playing. In-class practices and lectures involve developing a practice routine to prepare for the performance aspects of the course. At the end of the semester, students will select a song and performance style sharing the music making experience with an end-of-semester public recital.

Upon successful completion of MUS 121D, the student should be able to:

1. Tune the guitar properly using the relative tuning method.
2. Produce good tone and sound projection with proper left-hand and right-hand mechanics.
3. Read, write, and play the basic rudiments of music.
4. Read, write, and perform from modern staff notation and popular chord notation.
5. Discern and critique various style interpretations.
6. Show basic playing skills: right-hand picking techniques, chord progressions, major and minor scales, arpeggios, etudes/song exercises.
7. Perform elementary solo pieces, singing with accompaniment style playing, and ensemble literature in a public recital.

MUS 121Z 'Ukulele 1 (2) KCC AA/DA

1 hour lecture, 2 hours lecture/lab per week

Comment: Letter grade and credit/no credit only. MUS 121Z may not be audited. Student must supply their own 'ukulele (soprano, concert or tenor).

Music 121Z introduces the student to basic principle of playing the 'ukulele. Concepts and skills introduced in the class includes: basic musicianship, tuning, chord identification and progressions, basic strumming techniques, and the principles of accompanying and performing.

Upon successful completion of MUS 121Z, the student should be able to:

1. Tune their own instruments properly using the tuning by ear method.
2. Play the basic chord progressions.
3. Clap, write, and count aloud various rhythmic patterns.
4. Identify and perform basic strumming techniques.
5. Identify and perform basic strumming patterns.
6. Locate and name the notes on the fretboard.
7. Read and perform from 3 forms of notation for the 'ukulele (modern staff notation, chord notation and tablature).
8. Perform major and minor scales.
9. Identify and perform standard Hawaiian repertoire specifically written for the 'ukulele.
10. Select, modify, and perform music of other genres to the 'ukulele.
11. Examine the importance of the 'ukulele in the Hawaiian music culture and island history.

MUS 122B Voice Class II (2) KCC AA/DA

1 hours lecture, 2 hours lecture/lab per week

Prerequisite(s): MUS 121B with a grade of "C" or higher or consent of instructor.

MUS 122B is the second of a three-semester sequence in learning solo singing skills as a class. Four vocal styles (classical, jazz, ethnic, and country western) are explored and studied to experience the different vocal and musical skills required for each genre. Performances of each style are required.

Upon successful completion of MUS 122B, the student should be able to:

1. Identify and distinguish between various vocal styles and musical terms, and levels of musicianship.
2. Identify the origin and development of ethnic vocal music studied.
3. Give examples of intermediate level vocal techniques: diction, tone production, and breath control through actual performances and in descriptive writing.
4. Sing at an intermediate level solo vocal literature in a public recital.
5. Identify the different modes of accompaniment for all the vocal styles studied.

MUS 122C Class Piano II (2) KCC AA/DA

1 hour lecture, 2 hours lecture/lab per week

Prerequisite(s): MUS 121C with a grade of "C" or higher or consent of instructor.

MUS 122C is the second of a four-semester sequence in learning how to play the piano. Basic principles of performance will be explored, with a focus on expanding technical facility and sight-reading skills. Students will play on both digital and acoustic pianos in the electronic piano lab. Practice facilities are available on weekdays.

Upon successful completion of MUS 122C, the student should be able to:

1. Play all major scales and arpeggios, as well as the Group I minor scales (all three forms), two octaves/two hands.

2. Play in four different articulation styles: legato, staccato, marcato, and portato.
3. Apply wrist rotation coupled with varied arm weight to achieve greater finesse in dynamic contrast.
4. Identify major key signatures and their relative minor keys.
5. Build major and minor triads in root position, as well as 1st and 2nd inversion triads.
6. Play songs and technique exercises from second-level literature, as well as supplementary repertoire from a text such as First Bach Album.
7. Mind-map recital repertoire with colors and phrase shapes, then perform two of the three required recital selections by memory.

MUS 170 Music as Therapy (3) KCC AA/DH and KCC AS/AH

3 hours lecture per week

MUS 170 is an introductory course in understanding music as a therapeutic tool, both as an arts therapy profession, and as a process integrated into other health care fields. Students will explore the diverse applications and approaches to the therapeutic power of music, personally, professionally, clinically, scientifically, experientially and educationally. The course will include extensive media, weekly readings, weekly discussion posts, module quizzes, final exam and final project.

Upon successful completion of MUS 170, the student should be able to:

1. Identify the nature of music therapy and its role in health care.
2. Identify and describe the variety populations served by music therapy and other related music fields.
3. Describe and interpret the human responses to music.
4. Describe the pathways of music between different parts of the brain and the human response to music.
5. Identify and interpret the historical development of music and sound therapy.
6. Define basic terminology used in music therapy and related creative arts therapy fields.
7. Discuss basic musical skills (instrumentally and vocally) applicable for therapeutic purposes.

MUS 183 Ear-provisation: Piano by Ear (2) KCC AA/DA Spring

4 hours lecture/lab per week

Prerequisite(s): MUS 121C or consent of instructor.

Recommended Preparation: MUS 108.

Comment: MUS 183 is repeatable for a maximum of six credits. MUS 183 is offered in the spring semester only.

MUS 183 is designed to teach students the rudiments of how to play the piano by ear, as well as learn the basics for improvisation at the keyboard. These two main goals will be achieved by exploring how to listen strategically and respond to cues. Developing recognition of melodic distances (intervals) and patterns, rhythmic patterns, chord structure, root movement of bass line (by step, by 3rd, by 4th), articulation (variation in touch) styles, dynamic contrast, a variety of standard musical forms, logical fingering principles, and issues in pedaling will be studied both aurally and experientially at the keyboard. The main focus will be on developing a “seeing” ear (rather than seeing music and then reading it/ playing it). Five-finger positions, major/ minor scales and arpeggios, chromatic scale, whole tone scale, pentatonic scales, key signatures (identifying and building), and triads vs. suspended / 7th / 9th / 11th/ 13th chords will be covered, as well as the exploration of artistic gesture and sharing music with/ relating to an audience. This course focuses on developing a new skill set for “readers” of music, thus enhancing the enjoyment of playing the piano for personal satisfaction, increased self-esteem, and pleasure.

Upon successful completion of MUS 183, the student should be able to:

1. Play opening song motifs in at least three different keys for each interval studied (both ascending and descending forms) within an octave, for greater learning retention.
2. Play, identify aurally, and accurately transcribe intervals within an octave (given the starting note, in both ascending and descending forms).
3. Tap back and accurately transcribe short rhythmic patterns in both simple (2/4, 3/4, and 4/4) and in compound (6/8, 9/8, and 12/8) meters.
4. Play/accurately transcribe simple melodies (given a starting pitch) including rhythm used.
5. Playbacks: at the keyboard, play a series of melodic patterns that the instructor will highlight, demonstrate, and drill in class.
6. Sing (as a group) simple melodies demonstrated, with rhythm attached.

7. Demonstrate and apply basic music theoretical components of Western Music notation: play major, minor, chromatic, whole tone, pentatonic scales, and blues scale; identify and build major key signatures, and relate to minor keys; play a variety of chords and chord progressions, and demonstrate ability to write chord symbols accurately.
8. Demonstrate ability to differentiate aurally between major, minor, and diminished chords, as well as begin to differentiate between augmented, sus2 vs. sus4, and 7th chords.
9. Improvise to various rhythmic and melodic patterns given in class.
10. Transcribe or creatively notate/color-map, and play/perform two short solo (individual) projects by ear: the midterm project will be a minimum of eight measures in chosen meter, while the final project will be a minimum of sixteen measures in chosen meter.
11. Play by ear and creatively notate an assigned portion of final group project, and perform it with the class.

MUS 201 Vocal Ensemble (2) KCC AA/DA (Inactive)

1 hour lecture, 2 hours lecture/lab per week

Prerequisite(s): Audition or consent of instructor.

Comment: MUS 201 is currently inactive.

MUS 201 is a performance-oriented course for all students interested in singing in a small ensemble. The selected repertoire is drawn from a range of classical, popular (jazz, musical theatre), and Polynesian/ethnic choral literature. An extra-curricular concert is scheduled at the end of the semester. Previous choral experience is helpful but not required.

Upon successful completion of MUS 201, the student should be able to:

1. Identify and give examples of the repertoire presented.
2. Give examples of a more advanced knowledge of basic vocal technique.
3. Identify and list the problems of performance encountered in a variety of physical settings.
4. Give examples of performance etiquette, including behavior expectations prior to and after performances.
5. Perform at a more advanced level of ensemble singing in terms of musicianship and performance practice.

MUS 206 Synthesizer Ensemble (3) KCC AA/DA

6 hours lecture/lab per week

Prerequisite(s): Student must be able to read music in both the treble and the bass clef, and have had at least one semester of piano class or the equivalent, prior to taking this class.

Recommended Preparation: Two years of piano experience; some knowledge of synthesizers.

Comment: MUS 206 is repeatable for a maximum of six credits.

MUS 206 offers rehearsals and performances of the Synthesizer Ensemble, and utilizes an assortment of computerized synthesizers. Students are exposed to classical, pop, jazz, new age, and contemporary music, with a focus on the dichotomy of classical repertoire infused with contemporary synthesized techniques and patches in variation form. For the spring semester, students perform a mixture of classical, popular, jazz, and international music. This is a solo and ensemble class: each student will work on at least one piano/keyboard solo, as well as a majority of ensemble selections, to be performed at the 3-5 performances toward the end of the semester. Student must preferably have own equipment.

Upon successful completion of MUS 206, the student should be able to:

1. Demonstrate skill in various techniques of playing the synthesizer: smooth patch changes; use of legato touch when playing string patches, and use of mod wheel to achieve vibrato effect for wind instrumental sounds, etc.
2. Demonstrate knowledge of patch strengths/ weaknesses among the various synthesizers in performance set-up, for optimal sound capabilities and comparisons: be able to easily find acoustic piano, electric piano, digital bell, warm strings, mellow brass, harp, percussion, and other commonly-used patches on each keyboard.
3. Demonstrate ability to shape dynamics and phrasing through strategic control of volume slider on keyboard(s), thus enhancing ensemble performance.
4. Perform at least one contemporary keyboard solo by memory, using pitch and/ or modulation wheels.
5. Contribute at least one musical aspect or part for the ensembles international concert variations, incorporating styles of music ranging from classical to contemporary.
6. Work on at least one individual part by ear from CDs, mp3 recordings, and/or YouTube videos, to contribute to and enhance the spring concert music.
7. Demonstrate skills in teamwork as part of the ensemble: setting up equipment together, breaking down equipment after rehearsals/performances.

MUS 229 Musical Theatre: Song and Dance (3) KCC AA/DA and KCC AS/AH Fall

2 hours lecture, 2 lecture/lab per week

Prerequisite(s): Ability to pass audition by singing in tune and/or exhibiting basic dance technique, or consent of instructor.

Recommended Preparation: MUS 121B, DNCE 131, or THEA 101.

Comment: MUS 229 is repeatable for a maximum of 6 credits. MUS 229 may not be audited. MUS 229 is offered in the fall semester only.

MUS 229 is a vocal and dance course that focuses on the musical theatre genre. Topics explored in this course include the history of musical theatre, the development and tradition of song and dance, standard musical theatre repertoire, and the necessary preparation for staging a musical production. Activities include song and character analysis as well as basic choreography used in this genre.

Upon successful completion of MUS 229, the student should be able to:

1. Exhibit full range, accurate intonation, clarity in diction, and good tone production using proper vocal techniques in coordination with basic dance skills.
2. Perform at a competent level of musicianship (sing correct pitches, rhythms, the ability to read general musical notation).
3. Perform at a competent level of body awareness necessary for good vocal tone production and basic dance movements (alignment, coordination, strength, and flexibility).
4. Identify notable composers/lyricists and choreographers and their contribution to the musical theatre genre.
5. Identify signature musical theatre repertoire from a historical perspective.
6. Identify basic dance vocabulary used in musical theatre auditions and choreography.
7. Fundamentally master basic technique in a variety of styles of dance commonly utilized in musical theatre choreography.
8. Recognize music, dance and drama as an interdisciplinary art form.
9. Exhibit organizational skills necessary for musical theatre (scheduling, time management).
10. Project appropriate performance energy to express and evoke emotion and meaning for the audience.

MUS 230 Musical Theatre: Production (4) KCC AA/DA and KCC AS/AH Spring

2 hours lecture, 4 hours lecture/lab per week.

Prerequisite(s): MUS 229, audition or consent of Instructor.

Comment: \$25.00 for course materials. MUS 230 is repeatable for a maximum of 8 credits. MUS 230 may not be audited. MUS 230 is offered in the spring semester only.

MUS 230 is a performance course designed to enhance and develop students' voice, dance, and drama skills through the staging of a selected musical theatre production as well as offering a more in-depth study of performing practices in music, dance and drama and their interdisciplinary relationship.

Upon successful completion of MUS 230, the student should be able to:

1. Perform at an advanced level of vocal and dance skills necessary for any musical theatre audition.
2. Perform at a competent level of vocal, dramatic and dance skills necessary for a musical theatre production as shown through an actual staged production.
3. Analyze the interpretative aspects of a script through vocal and dance skills as shown in rehearsals and the actual staged production.
4. Identify and discuss the origin and historical, political and economic significance of the selected musical theatre production.
5. Identify the different aspects of a musical stage production, such as stage managing, lighting, costuming and set design by staging an actual production.
6. Prepare and write a formal resume required for musical theatre production companies during the audition process.
7. Exhibit the organizational skills required for time management in the performing arena.
8. Project the appropriate performance energy and stamina required in a staged musical theatre production.

MUS 231B Applied Music, Western (Voice) (1 or 2) KCC AA/DA

30 minutes individual lesson per week (one credit) or 1 hour individual lesson per week (two credits)

Prerequisite(s): Credit or concurrent enrollment in MUS 122B or audition and consent of instructor.

Comment: MUS 231B is repeatable for a maximum of six credits. Special fee per credit in addition to regular tuition. MUS 231B may not be audited. MUS 231B may not be taken credit/no credit. Meeting times arranged between student and instructor on an individual basis.

MUS 231B is a course for individual instruction in the finer details of vocal performance. This entails a focus on the musical fundamentals and the importance of textual content as well. Students meet with the instructor for either 30 minutes per week (one credit) or for 1 hour per week (two credits).

Upon successful completion of MUS 231B the student should be able to:

1. Discern and demonstrate range, good intonation and tone production using proper and vocal techniques from an intermediate to advance level.
2. Identify a variety of song types and singing styles ranging from classical music to present day popular music including musical theater.
3. Perform with a higher degree of body awareness necessary for good vocal tone production.
4. Perform each vocal solo, particularly in English, with a relatively high degree of musicianship throughout all singing styles studied.
5. Distinguish between the different qualities of an artist (interpretation, musicality, the breathing apparatus and stylization, the kinds of accompaniments).
6. Perform a series of vocal songs in a recital program.

MUS 231C Applied Music, Western (Piano) (1) KCC AA/DA

30 minutes individual lesson per week

Prerequisite(s): MUS 121C and 122C; a minimum one year of piano lessons (but preferably 5-10 years of piano lessons/experience); audition/interview and consent of instructor.

Comment: MUS 231C is repeatable for a maximum of six credits. MUS 231C is a special course offered by the Office of Continuing Education and Training (OCET).

MUS231C provides individual instruction in piano performance, covering intermediate and advanced piano technique paced to an appropriate level for each student's experience. Applied piano instruction is essentially a performance class. The emphasis will be toward developing piano technique that has clarity, flexibility, dynamic intensity, and sensitivity of phrasing for expressive musicianship through increasingly more confident and skillful performances. Pedaling, theory, sight-reading, and learning/ practicing/ memorization/ performing techniques will also be covered.

Upon successful completion of MUS 231C, the student should be able to:

1. Play piano literature from Two-Part Inventions, and Preludes and Fugues from the WTC Vol. 1 and 2, by J. S. Bach; first movements of a sonata by Haydn, Mozart, and/ or Beethoven; two compositions by a Romantic and/ or Impressionistic composer (these could include music by Chopin, Rachmaninoff, Schubert, Scriabin, Debussy, for example); and at least one composition by a Contemporary composer (these could include music by Bartok, for example, as well as living composers in this century).
2. Learn how to create and then draw colormaps (five) for each composition performed, enabling more secure memorization through the use of color to highlight music motifs and repetitive elements. This is especially important for contemporary (Bartok) repertoire.
3. Show development of confidence in performance skills, through performing with obvious enjoyment at music discipline repertoire recitals, thus enabling the communication of music as a language that is pleasurable to "speak" to others.
4. Play Major and harmonic minor scales and arpeggios, four octaves, hands together, M.M. 92 to the quarter note, as well as play Major and minor triad progressions beginning in root position.

MUS 231M Applied Music, Western (Flute) (1 or 2) KCC AA/DA

30 minutes individual instruction per week (one credit) or for one hour per week (two credits)

Prerequisite: 2-3 years private instruction and/or band experience, audition/interview and consent of instructor.

Recommended Preparation: 2-3 years private instruction and/or band experience.

Comment: MUS 231M is repeatable for a maximum of six credits. MUS 231M is a special course offered by the Office of Continuing Education and Training.

MUS 231M is a performance course with an emphasis toward developing greater flexibility of technique as well as expansion of repertoire. Sight-reading and learning/practicing/memorization/performing techniques will also be covered.

Upon successful completion of MUS 231M, the student should be able to:

1. Demonstrate development and refinement of basic skills and techniques of playing the flute, to include tonguing, slurring, strategic breathing for phrase structure, appropriate vibrato, and dynamic contrast within each phrase of music.
2. Clap and count simple, intermediate, and advanced rhythmic figures in music.
3. Develop and practice sight-reading skills (reading by interval, keeping eyes ahead of fingers, etc.), so that the student can sight-read selected pieces of music.
4. Memorize repertoire for repertoire recitals as well as for board exams (learn colormap technique).

5. Perform solos as well as ensemble literature (ensemble literature could be demonstrated by the student performing with the KCC Synthesizer Ensemble on selected flute features, or performing duet literature with flute professor or other students that play the flute).
6. Write/type two pages of concert critique and discuss flute performance aspects.

MUS 253 Elementary Music in Action (3) KCC AA/DA

3 hours lecture per week

Comment: Letter grade only. MUS 253 may not be audited. MUS 253 may not be taken credit/no credit.

MUS 253 focuses on musical concepts, philosophy and pedagogy: use of media, singing, movement, and instruments; as well as resources for an active elementary music classroom.

Upon successful completion of MUS 253 the student should be able to:

1. Describe a level of comprehension of the biological, cognitive, social, and musical characteristics of children from six through twelve years of age
2. Use knowledge of human behavior drawn from the foundations of psychology, such as Gardner's multiple intelligences and brain, research, which provide support for the importance of the early years in musical development.
3. Develop a repertoire of materials including music of the world: Hawaiian, Far East: Chinese & Japanese, Native Americans & North-American - Appalachians.
4. Identify a basic understanding of technology use for instructional and organizational applications in elementary music teaching.
5. Demonstrate skills and competency levels in reading simple notations, singing solfege with hand signs and chanting with rhythmic syllables.
6. Demonstrate skills and competency levels in playing 'ukulele.
7. Demonstrate skills and competency levels when modeling activities such as singing, movement, listening, reading music, and playing classroom instruments (pitched and non-pitched) for elementary school children.
8. Perform quality music literature and activities to effectively teach elementary school children.
9. Demonstrate effective lesson planning, utilize sequential patterns of instruction and provide effective delivery and pacing in teaching elementary school children.
10. Demonstrate the ability to read and write in journals expressing affirmations and transformations as well as reflections on personal development as teachers.