INTEGRATED TECHNOLOGY STUDIES

Associate of Applied Science

Provides students the opportunity to select courses from across several areas, with an emphasis in technology, to meet the students’ unique career goals. A program of study is developed with the School of Science, Technology, and Mathematics' assigned advisor and approved by the advisor and the department chair. This degree requires proof of computer literacy.

General Education

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<tr>
<td>HIST 2111</td>
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<tr>
<td>MATH 1111</td>
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ELECTIVES: Choose 6 hours from areas A-E for AA or AS General Studies

Major Field Courses

CAREER ELECTIVES: Courses appropriate to the academic and career goals of the student as approved by the student’s advisor and the Chair of the Department of Technology and Mathematics. Each student's plan of study must be approved as soon as possible upon entering the program. It is the responsibility of the student to obtain this approval.

Total Hours 60-61

Computer Applications/Systems Courses

CAPS 1101. Introduction to Computers. 2-2-3 Units.
If a student has no computer experience, it is advised to take OADM 1140. Students who have no knowledge of computer key function and do not type a minimum 20 words per minute are urged to take OADM 1140, either prior to, or in conjunction with, this course. A survey of computer-related topics; including the basic elements of a computer system, ways in which computers can be used, and their organizational and social impact. Hands-on experience with microcomputers using Microsoft Windows, data-management, and electronic-spreadsheet programs. This course satisfies the computer literacy requirement. (Career Course) (F,S,M)

CAPS 1140. Microcomputer Operating System. 2-2-3 Units.
An overview of operating system essentials for microcomputers, with emphasis on a current version of MS/Windows. This course satisfies the computer literacy requirement. (Career Course)(F,S)

CAPS 1145. Introduction to Networks. 3-0-3 Units.
Introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.(F,S)

CAPS 1152. Linux. 3-0-3 Units.
Study of the Linux operating system, to include basic system operation and access, system installation and configuration, file system organization, file management and manipulation, shell usage, and system maintenance and security. This course satisfies the computer literacy requirement.(F)
Prerequisites: CAPS 1140.

CAPS 1211. Intro to RPG Programming. 3-2-4 Units.
Students design, code, and test programs using the Report Program Generator (RPG) language. Programs written include report editing, mathematical operations, use of subroutines to support structured programming, IFS and case structures, and external and logical files. This course satisfies the computer literacy requirement.(As needed for Industry)

CAPS 1212. Advanced RPG Programming. 3-2-4 Units.
A continuation of CAPS 1211. Programs written include file processing, interactive applications, tables and arrays, and subfiles. Review of RPG logic cycle. This course satisfies the computer literacy requirement.(As needed for Industry)

CAPS 1213. Control Lang Prog iSeries 400. 2-2-3 Units.
Introduces concept, purpose, uses, and implementation of Control Language (CL) programming. Emphasis is on CL syntax and interactive and batch programs in the iSeries environment. This course satisfies the computer literacy requirement.(As needed for Industry)

CAPS 1216. Database/Interactive Applicati. 3-2-4 Units.
This course involves Database design; queries; application development in a database environment. Students receive hands-on experience with a rational database package. This course satisfies the computer literacy requirement.(As needed for Industry)

CAPS 1240. Advanced Topics in CAPS. 3-0-3 Units.
Selected topics in the use of the computer based on current needs and trends; for example, an in-depth exploration of an operating system or an introduction to a programming language not currently taught. This course satisfies the computer literacy requirement.(As needed for Industry)

CAPS 1270. Routing & Switching Essentials. 3-0-3 Units.
Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.(F,S)
Prerequisites: CAPS 1145.

CAPS 1275. Comp Syst/Networking Security. 3-0-3 Units.
An introduction to communication security in computer systems and networks. Both information flow and information integrity policies will be considered. Topics include: authentication, protection, security models, cryptography, application, hacker tools and public policy, along with case studies.(Offered as needed)
Prerequisites: CAPS 1140.
**CAPS 1276. Scaling Networks. 3-0-3 Units.**
Describes the architecture, components, and operations of routers and switches in a large and complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. (FS)
Prerequisites: CAPS 1270.

**CAPS 1277. Connecting Networks. 3-0-3 Units.**
Discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network. (FS)
Prerequisites: CAPS 1276.

**ELCT 1005. Direct Current Circuits I. 2-2-3 Units.**
Provides knowledge and skills to analyze, construct, and troubleshoot basic Direct Current electrical circuits that contain resistors. Topics include: electrical safety, electrical quantities, meters, Ohm's law, energy and power, series and parallel circuits, opens and shorts, and soldering techniques. (Career Course)
Prerequisites: BUSA 2201 or CMPS 1130.

**ELCT 1010. PC Maint & Troubleshooting. 2-2-3 Units.**
Provides knowledge and skills to create programs using Microsoft's Visual BASIC. Topics include BASIC Programming, debugging programs, forms, menus, OLE, standard controls, and ActiveX controls. This course satisfies the computer literacy requirement. (Career Course)
Prerequisites: BUSA 2201 or CMPS 1130.

**ELCT 1045. Intro to Visual BASIC Progra. 2-4-4 Units.**
This course provides knowledge and skills to design and implement BASIC programs using Microsoft's Visual BASIC. Topics include: number systems, logic gates, Boolean expressions, combinational logic, Karnaugh maps, programmable logic devices, adders, logic families. (Career Course)
Prerequisites: ELCT 1005.

**Electronics Courses**

**ELCT 1055. Digital Logic Circuits I. 2-2-3 Units.**
Provides knowledge and skills to design and implement digital logic circuits. Topics include: number systems, logic gates, Boolean expressions, combinational logic, Karnaugh maps, programmable logic devices, adders, logic families. (Career Course)
Prerequisites: ELCT 1005.

**ELCT 1064. Direct Current Circuits II. 2-2-3 Units.**
Provides knowledge and skills to analyze, construct, and troubleshoot basic Direct Current electrical circuits that contain resistors, inductors and capacitors. Topics include: Basic electromagnetism, AC waveforms, frequency and period, amplitude, AC measurements, oscilloscope, purely resistive AC circuits, inductance, capacitance, time constraints, reactance, impedance, basic transformer action, and three-phase supplies. (Career Course)
Prerequisites: ELCT 1005.

**ELCT 1085. Semiconductor Devices and Circuits I. 2-2-3 Units.**
Provides knowledge and skills to analyze, construct, and troubleshoot simple semiconductor circuits. Topics include: PN junction diodes, clippers and clamps, zener voltage regulator, LED, photo diodes, varactors, power supplies, rectifier types, the bipolar junction transistor, and field effect transistors. (Career Course)
Prerequisites: ELCT 1005.

**ELCT 1100. PC Maint & Troubleshooting. 2-2-3 Units.**
This course provides basic knowledge and skills for the student to perform maintenance and upgrades to microcomputer systems. Topics include microcomputer components, hardware and software maintenance procedures, MS-DOS and up-grading common computer components. This course satisfies the computer literacy requirement. (F)
Prerequisites: BUSA 2201 or CMPS 1130.

**ELCT 2005. Direct Current Circuits II. 2-2-3 Units.**
Provides knowledge and skills to analyze, construct, and troubleshoot more complex DC electrical circuits that contain resistors, capacitors, and inductors. Topics include: series-parallel circuits, source transformations, basic cell and battery construction and operation, resistive network theorems, Wye-Delta conversions, maximum power transfer theorem, and exponential rise and decay in RC and RL circuits. (Career Course)
Prerequisites: ELCT 1005.

**ELCT 2015. Electrical Circuit Analysis. 3-3-4 Units.**
This course introduces electric circuit variables and measurements, circuit elements, resistive circuits, methods of analysis of resistive circuits, circuit theorems, energy storage elements, transient response of simple RL and RC circuits, sinusoidal steady-state analysis, AC steady-state power and the use of circuit simulation software.
Prerequisites: PHYS 2212K, MATH 2254.
ELCT 2025. Intro to Microprocessors. 2-2-3 Units.
Provides basic knowledge of microprocessor circuits and their relation to computer programs. Topics include: CPU, arithmetic operations, logic operations, RAM, ROM, I/O, system buses, control signals, timing signals, and typical faults. (Career Course)
Prerequisites: ELCT 1055 or permission of instructor.

ELCT 2035. Elec Troubleshooting Technique. 2-2-3 Units.
Provides knowledge and skills to methodically troubleshoot electrical/electronic systems. Topics include: review of basic electrical concepts relating to all electrical and electronic components, industrial control devices circuits, transformers, motors, troubleshooting methodology and skills, and maintenance. (Career Course)
Prerequisites: ELCT 1055.

ELCT 2040. Programmable Logic Controllers. 2-2-3 Units.
Provides knowledge and skills to analyze, construct, program, and troubleshoot computer-based programmable logic controllers used in industrial processes. Topics include: programmable controllers, input/output, processing and programming, field wiring, start-up, timers, counters, sequencers, analog and digital I/O, PID, Human Machine Interface (HMI) software and troubleshooting. (Career Course)
Prerequisites: ELCT 1055.

ELCT 2045. Digital Logic Circuits II. 2-2-3 Units.
Provides knowledge and skills to analyze and troubleshoot sequential and complex digital logic circuits. Topics include: flip-flop, latches, registers, counters, multiplexers, decoders, ALU, and troubleshooting. (Career Course)
Prerequisites: ELCT 1055.

ELCT 2065. Alternating Current Circuits II. 2-2-3 Units.
Provides knowledge and skills to analyze, construct, and troubleshoot more complex AC electrical circuits. Topics include: complex number representation of phasors, series, and parallel RL and RC circuits, network analysis for AC circuits, RLC circuits, resonance and passive filters. (Career Course)
Prerequisites: ELCT 1065.

ELCT 2075. Motors, Drives, and Controls. 2-2-3 Units.
Provides knowledge and skills to analyze, install, and troubleshoot AC/DC motor drives. Topics include: electronic motor drives, single-phase AC motors, three-phase AC motors, inverters, branch circuit protection, and overload protection, maintenance and troubleshooting procedures. (Career Course)
Prerequisites: ELCT 1055 and ELCT 1085.

ELCT 2085. Semiconductor Devices and Circuits II. 1-2-2 Units.
Provides knowledge and skills to analyze, construct, and troubleshoot more complex semiconductor circuits. Topics include: BJT amplifier analysis, FET amplifiers, Operational amplifier characteristics and applications, oscillators, and thyristors. (Career Course)
Prerequisites: ELCT 1085.

ELCT 2090. Instrument and Control Systems. 1-2-2 Units.
Provides knowledge and skills to analyze, construct, program, and troubleshoot instrumentation and control systems used in industrial processes. Topics include: sensors, controllers, PLC’s, construction, application, calibration, installation and removal of equipment, process control operation (PID loops, single and cascade), input/output, processing and programming, and Human Machine Interface (HMI) software. (Career Course)
Prerequisites: ELCT 1055 and ELCT 1085.

ELCT 2115. Robotics. 1-2-2 Units.
Explores basic robotic concepts. Studies in typical application environments. Topics include: robot history and fundamentals, robot classification, power sources, robot application in the workplace, robot control techniques, path control, end of arm tooling robot operation and robot controllers, controller architecture in a system, robotic language programming, and human interface issues. Use of the robots on the Computer Integrated Manufacturing Systems (CIMS) will provide the laboratory requirements. (Career Course)
Prerequisites: ELCT 2090.

ELCT 2116. Computer Integ Manuf (CIMS). 1-2-2 Units.
Introduces the concepts, terminology, and programming of Computer Integrated Manufacturing (CIMs). Allows students to work in instructor-supervised teams, assembling and operating an automated production system. Reviews system electrical, electronic and mechanical principles and equipment as it applies to a flexible manufacturing system, in this case the Computer Integrated Manufacturing System (CIMS). (Career Course)
Prerequisites: ELCT 2040.
Corequisites: ELCT 2115.

ELCT 2120. A+ Certification Review. 3-0-3 Units.
Provides a review and summary of knowledge from previous courses, enhances understanding of operating systems, and helps the student prepare for the A+ Certification Exam. (S)
Prerequisites: ELCT 1100.

ELCT 2125. Telecommunications Principles. 2-2-3 Units.
Provides an overview of current telecommunications technologies. Topics include: telecommunications history, system features, modulation techniques, multiplexing techniques, transmission media, telephone network, wireless communication, data communication protocols, LANs, WANs, ISDN, ATM, networking technologies. (Career Course)
Prerequisites: ELCT 2065 and ELCT 2085.

Licensed Practical Nursing Courses

LPNS 1000. Nursing Fundamentals Theory. 4-0-4 Units.
The theory portion of Fundamentals, this course assists students in developing the knowledge and skills needed to perform basic nursing procedures. Through emphasis on the nursing process students are taught the basic principles and concepts involved in meeting the needs of the individual patient. Topics include: orientation to the profession, ethics and law, community health, cultural diversity, basic nursing procedures, health teaching, wellness promotion, rehabilitation and therapeutic communication, with a focus on geriatric nursing.

LPNS 1001. Med Calculation. 2-0-2 Units.
This course provides the student with the basic skills to compute medication dosages and calculate solutions. Proficiency in conversion between systems of measurement will be developed. Content includes some broad drug classifications, actions, common side effects and criteria for evaluating effectiveness of drug therapy.

LPNS 1005. Nurs Fundamentals Practicum. 0-16-4 Units.
The practicum part of Fundamentals, this introductory nursing course emphasizes development of basic nursing skills utilized in activities of daily living, and medication administration techniques. Various skills and techniques will require return demonstrations in both the lab and clinical setting. There is an off campus clinical component to this course requiring clinical hours in the area of geriatrics.
LPNS 1006. Nursing Fundamentals. 3-3-6 Units.
A foundation course that introduces nursing concepts and skills related to the care of multicultural individuals across the lifespan with a focus on geriatric nursing. Requires clinical applications using evidence-based practice in a variety of health care and simulated settings.
Prerequisites: BIOL 1100, MATH 1001, 1101, 1111, or 1113, ENGL 1101, ENGL 1102 or COMM 1110, and PSYC 1101.

LPNS 1008. Nursing Care of Children. 3-5-5 Units.

LPNS 1009. Maternal/Newborn Nursing. 3-5-5 Units.

LPNS 1010. Medical Surgical I Theory. 4-0-4 Units.
The first of four Medical Surgical courses, this theory course focuses on the health management, maintenance, and the prevention of illness and care of the individual as a whole, with attention to deviations from the normal state of health. The definition of client care includes using the nursing process, performing assessments, using critical thinking, and providing client education. This course includes: health management and maintenance, prevention of illness, care of the individual as a whole, and deviations from the normal state of health, client care, treatment, pharmacology, and diet therapy in the cardiac, hematology/lymphatic, immune and musculoskeletal systems and standard precautions related to these systems. All curriculum threads are continuous.

LPNS 1011. Medical Surgical I. 4-16-8 Units.
The first of four medical-surgical courses. This course concentrates on nursing concepts and skills related to the care of multicultural individuals across the lifespan. It includes: health management and maintenance, prevention of illness, care of the individual as a whole, and deviations from the normal state of health, client care, treatment, pharmacology, and diet therapy. Addresses relevant well-defined health alterations. Requires clinical applications using evidence-based practice in a variety of health care, community based, and simulated settings. All curriculum threads are continuous. Pre-requisites: LPNS 1001, LPNS 1006.

LPNS 1012. Medical Surgical I. 3-5-8 Units.
The first of two medical-surgical courses. This course concentrates on nursing concepts and skills related to the care of multicultural individuals across the lifespan. Addresses relevant well-defined health alterations. Requires clinical applications using evidence-based practice in a variety of health care, community based, and simulated settings. Pre-requisites: LPNS 1001, LPNS 1006, LPNS 1008.

LPNS 1015. Medical Surgical I Practicum. 0-16-4 Units.
The first of four Medical Surgical practicum course will provide the student with the opportunity to utilize skills acquired in the core curriculum, to acquire insight into his/her personal development toward becoming a practical nurse, to develop and utilize communication skills, verbal and non-verbal (including documentation in the clients record or chart) and to safely and effectively relate theory in the areas of the cardiovascular, hematologic/lymphatic, immune and musculoskeletal systems. Clinical skills relating to diagnostic tests and procedures, medical and surgical treatments, medications and diet therapy, psychosocial, cultural aspects, and support of the terminally ill and death will be studied.

LPNS 1020. Medical Surgical II Theory. 4-0-4 Units.
The second of four Medical Surgical courses this theory course focuses on the health management, maintenance, and the prevention of illness and care of the individual as a whole, with attention to deviations from the normal state of health. The definition of client care includes using the nursing process, performing assessments, using critical thinking, and providing client education. As a continuation of LPNS 1010, this course includes: health management and maintenance, prevention of illness, care of the individual as a whole, and deviations from the normal state of health, client care, treatment, pharmacology, and diet therapy in the endocrine, renal, urinary, respiratory and integumentary systems and standard precautions related to these systems. All curriculum threads are continuous.

LPNS 1021. Medical Surgical II. 3-5-9 Units.
A continuation course that concentrates on nursing concepts and skills related to the care of multicultural individuals across the lifespan. Addresses relevant well-defined health alterations. Requires clinical applications using evidence-based practice in a variety of health care, community based, and simulated settings. Prerequisites: LPNS 1006, LPNS 1001, LPNS 1011.

LPNS 1022. Medical Surgical II. 3-5-9 Units.
A culmination course that concentrates on nursing concepts and skills related to the care of multicultural individuals across the lifespan. Addresses complex well-defined health alterations. Involves team management of patients and health care workers. Requires clinical applications using evidence-based practice in a variety of health care, community based, and simulated settings. Prerequisites: LPNS 1009, LPNS 1011.

LPNS 1025. Med Surgical II Practicum. 0-16-4 Units.
The second of four Medical Surgical practicum courses will provide the student with the opportunity to utilize skills acquired in the core curriculum, to acquire insight into his/her personal development toward becoming a practical nurse, to develop and utilize communication skills, verbal and non-verbal (including documentation in the clients record or chart) and to safely and effectively relate theory in the areas of the endocrine, renal, urinary, respiratory and integumentary systems. Clinical skills relating to diagnostic tests and procedures, medical and surgical treatments, medications and diet therapy, psychosocial and cultural aspects will be studied.

LPNS 1030. Medical Surgical III Theory. 4-0-4 Units.
The second of four Medical Surgical courses this theory course focuses on the health management, maintenance, and the prevention of illness and care of the individual as a whole, with attention to deviations from the normal state of health. The definition of client care includes using the nursing process, performing assessments, using critical thinking, and providing client education. As a continuation of LPNS 1020, this course includes: health management and maintenance, prevention of illness, care of the individual as a whole, and deviations from the normal state of health, client care, treatment, pharmacology, and diet therapy in the neurological, gastrointestinal, sensory and mental health systems and standard precautions related to these systems. All curriculum threads are continuous.

LPNS 1031. Medical Surgical III. 4-16-8 Units.
A continuation course that concentrates on nursing concepts and skills related to the care of multicultural individuals across the lifespan. Addresses relevant well-defined health alterations. Requires clinical applications using evidence-based practice in a variety of health care, community based, and simulated settings. Prequisites: LPNS 1001, LPNS 1006, LPNS 1011, LPNS 1021.
CAREER COURSES

LPNS 1035. Med Surgical III Practicum. 0-16-4 Units. The third of four Medical Surgical practicum courses, will provide the student with the opportunity to utilize skills acquired in the core curriculum, to acquire insight into his/her personal development toward becoming a practical nurse, to develop and utilize communication skills, verbal and non-verbal (including documentation in the clients record or chart) and to safely and effectively relate theory in the areas of the neurologic, gastrointestinal, sensory systems and mental health. Clinical skills relating to diagnostic tests and procedures, medical and surgical treatments, medications and diet therapy, psychosocial and cultural aspects will be studied.

LPNS 1040. Medical Surgical IV Theory. 4-0-4 Units. This theory based course focuses on the reproductive system, maternal/newborn nursing, and pediatrics. The class begins with an introduction to the reproductive system, caring for clients with reproductive system disorders, and sexually transmitted diseases. The focus then shifts to maternal/newborn nursing and the prevention of illness, care of the individual as a whole, and deviations from the normal state health in the antepartum, intrapartum client, postpartum client, and the neonate. The course ends with the development, prevention of illness, care of the individual as a whole, and deviations from the normal state of health in the newborn, child and adolescent.

LPNS 1045. Med Surgical IV Practicum. 0-16-4 Units. The fourth of four Medical Surgical practicum courses, will provide the student with the opportunity to utilize skills acquired in the core curriculum, to acquire insight into his/her personal development toward becoming a practical nurse, to develop and utilize communication skills, verbal and non-verbal (including documentation in the clients record or chart) and to safely and effectively relate theory in the areas of the reproductive system, obstetrics and pediatrics. Clinical skills relating to diagnostic tests and procedures, medical and surgical treatments, medications and diet therapy, psychosocial and cultural aspects will be studied.

LPNS 1050. Leadership Theory. 2-0-2 Units. This online course builds on the concepts presented in previous nursing courses. This course increases the development of skills necessary for successful performance in the job market. Topics include changing roles, nursing supervisory skills, conflict resolution, critical thinking, client/patient education, group dynamics skills, and application of nursing process as a problem solving tool.

LPNS 1051. Leadership. 2-2-3 Units. This online course builds on the concepts presented in previous nursing courses. This course increases the development of skills necessary for successful performance in the job market. Topics include changing roles, nursing supervisory skills, conflict resolution, critical thinking, client/patient education, group dynamics skills, and application of nursing process as a problem solving tool. Clinical experience will be in a skilled nursing home or acute care setting.

LPNS 1055. Leadership Practicum. 0-2-2 Units. This clinical course builds on concepts presented in LPNS 1050 and develops the skills necessary for successful performance in the job market. Clinical experience will be in a skilled nursing home or acute care setting.

LPNS 1109. Nursing Fundamentals I. 4-0-4 Units. The first of two courses. This course assists students in developing the knowledge and skills needed to perform basic nursing procedures. Through emphasis on the nursing process students are taught the basic principles and concepts involved in meeting the needs of the individual patient. Topics include: orientation to the profession, ethics and law, community health, cultural diversity, and basic nursing procedures. (Career Course)(F,S)
Prerequisites: Acceptance into LPN program.

LPNS 1141. Pediatrics. 3-4-5 Units. This course is structured toward the utilization of the nursing process and nursing skills applicable to child care in the home and hospital setting. Instruction focus will lend itself to relevant pharmacology, diet therapy, normal growth and development, and nursing interventions associated with health prevention and disease/disorders of all body systems. (Career Course)(F,S)
Prerequisites: LPNS 1140.

Medical Laboratory Technology Courses

MLTS 1101. Intro to Health Sci/Phlebotomy. 3-1-3 Units. The student is introduced to the health sciences environment and language. The hospital as an organization is discussed, as well as the role of each major department. The concepts, personnel, and work flow of the clinical laboratory is discussed in detail, as an example of health care application. Other topics include professional ethics, regulatory agencies, legal concepts as applied to confidentiality and patients rights, infection control, and safety. Students will learn venipuncture/capillary puncture techniques, equipment, application, and specimen processing. Enrollment is limited to students of the Medical Laboratory or Phlebotomy programs. (Career Course)

MLTS 1102. Phlebotomy Clinical Practicum. 1-11-5 Units. Students receive clinical application of the venipuncture and micropuncture skills learned in MLTS 1101. Five days per week students are assigned to an area hospital where they work under the direct supervision of a preceptor. Students return to campus one afternoon per week for problem-solving and review. (Career Course)
Prerequisites: ALHT 1130, CAPS 1101, MLTS 1101, and BIOL 1100 with a grade of C or better.

MLTS 1103. Hematology/Coagulation I. 2-0-3 Units. Introduces the fundamental formation of normal blood cells and some disease states related to hemopoiesis. Safety and quality control are also included throughout the course. Instrumentation relating to hematology is introduced. (Career Course)

MLTS 1104. Hematology/Coagulation II. 2-2-3 Units. Coagulation and related diseases, instrumentation relating to coagulation, critical level, blood cell dyscrasias, special stains, leukemias/lymphomas, flow cytometry, safety and quality control are covered. (Career Course)
Prerequisites: MLTS 1103.

MLTS 1105. Serology/Immunology. 2-2-3 Units. Introduces the fundamental theory and techniques applicable to serology and immunology practice in the clinical laboratory. Topics include: immune system, antigen and antibody reactions, common clinical applications, serological/microbiological applications, common serological techniques, and safety and quality control. (Career Course)
Prerequisites: BIOL 2215K or BIOL 2213K.
MLTS 1106. Blood Bank. 2-2-3 Units.
Provides an in-depth study of immunohematology principles and practices as applicable to medical laboratory technology. Topics include genetic theory and clinical implications, immunology, donor collection, pre-transfusion testing, management of disease statistics, and safety and quality control. (Career Course)
Prerequisites: BIOL 2215K or BIOL 2213K.

MLTS 1107. Clinical Chemistry. 3-2-4 Units.
Develops concepts and techniques of clinical chemistry applicable to medical laboratory technology. Topics include: carbohydrates, electrolytes and acid-base balance, nitrogenous compounds, enzymes and endocrinology, bilirubin metabolism, lipids, toxicology and therapeutic drug monitoring, and safety and quality control. (Career Course)
Prerequisites: CHEM 1211K.

MLTS 1112. Urinalysis/Parasitology. 2-2-3 Units.
Provides theory and techniques of urinalysis. Urinalysis topics include: significance, correlation to disease states, physical, chemical and microscopic urinalysis theory and practice. Selected types of other body fluids will be discussed to discover their significance and uses in disease correlation. This class also introduces concepts and techniques used in the identification of selected human parasites. (Career Course)

MLTS 1118. Instrumentation/Computer Appli. 2-2-3 Units.
Clinical Laboratory provides an introduction to basic physics concepts used in clinical laboratory instrumentation. Examine, in detail, selected equipment in the laboratory representing the principles of cell counting, spectrophotometry, continuous-flow analysis, and radioimmunoassay. Computer concepts, applications, and interfacing with laboratory instrumentation is introduced. Satisfies the computer literacy requirement. (Career Course)
Prerequisites: MLTS 1101, MLTS 1103, and MLTS 1105.

MLTS 1190. MLT Clinical Practicum I. 0-3-1 Unit.
Introduces Medical Laboratory Technician students to the hospital environment. Students gain experience with venipuncture and microcapillary techniques while working under the direction of a hospital preceptor. (Career Course)
Prerequisites: MLTS 1101 or permission of instructor.

MLTS 1191. MLT Clinical Practicum II. 0-3-1 Unit.
Resumes the clinical experience begun in Medical Laboratory Technology 1190. Students rotate through selected departments in the clinical laboratory to apply and complement concepts and applications learned in previous Medical Laboratory Technology courses. Introduces students to problem solving at the clinical level. (Career Course)
Prerequisites: MLTS 1101, MLTS 1104, MLTS 1105, MLTS 1190.

MLTS 2218. Microbiology. 2-4-4 Units.
Introduces fundamental clinical microbiology theory and techniques applicable to disease state identification. Topics include: isolation techniques, biochemical techniques, anti-microbial sensitivity, safety and quality control, and disease processes. (Career Course)
Prerequisites: BIOL 2215K or BIOL 2213K.

MLTS 2290. MLT Clinical Practicum III. 1-32-12 Units.
Full-time supervised experience in an affiliated clinical laboratory. Students will rotate among designated laboratory sections where they will work side by side with, and be under the supervision of, medical technologists and the laboratory director, to develop professional skills in the practice of medical laboratory technology. (Career Course)

MLTS 2291. MLT Clinical Practicum IV. 0-12-4 Units.
Full-time supervised experience in an affiliated clinical laboratory. Students will rotate among designated laboratory sections where they will work side by side with, and be under the supervision of medical technologists and the laboratory director, to develop professional skills in the practice of medical laboratory technology. (Career Course)
Prerequisites: MLTS 2290 with a grade of C or better.

Supervision Courses
SUPV 2205. Into to Human Resources Mgmt. 3-0-3 Units.
An introduction of major topical areas in human resources management. Emphasis is placed on the functional areas that form the major occupational categories in personnel. Basic concepts in employment planning, recruiting, employee and labor relations, compensation and benefits, health and safety, and security are included. (Career Course)

SUPV 2207. Small Business Management. 3-0-3 Units.
An introduction to entrepreneurship and practical applications to the management and operation of small businesses. Included are: start-up issues, legal forms of organization, operational planning, financing the business, budgeting, personnel issues, developing an accounting and control system, long-range planning and strategy formation, developing a business plan, and other appropriate topics. (Career Course)

SUPV 2210. Supervisory Development. 3-0-3 Units.
This course provides supervisory skills training needed by supervisors in a broad array of working environments. Supervision concepts that apply to most every situation will be examined. Particular attention will be spent on unique issues, ideas, and trends that affect supervisors. (Career Course)

SUPV 2212. Managing Financial Performance. 3-0-3 Units.
In this non-accounting course students will learn to read and understand financial statements and to use them as management tools. They will become aware of how management decisions affect income statement and balance sheets, as well as a company’s cash flow. They will learn to calculate a simple break even analysis and see how changes in a company’s cost structure affect it’s profitability. Students will also learn how to access financial information about the industry in which they work. (Career Course)

SUPV 2220. Customer Relationship Developm. 3-0-3 Units.
This course presents a comprehensive approach to creating, maintaining, and expanding customer relationships. By combining theory with best practices and applications of proven customer service techniques, it is designed to help those in marketing and management positions to better understand how to motivate their employees and serve their customers by infusing a customer service attitude into the organization. (Career Course)