UTAH SYSTEM OF HIGHER EDUCATION

# MEMORANDUM

TAB A

April 15, 2022

## Program Alignment – Single Institution Programs

Last year, the Board of Higher Education directed the technical colleges to align programs and asked the commissioner's office to facilitate faculty committees from each discipline to design aligned program guides. Attached is the first set of program guides from the faculty committees. In this case, these programs are offered by a single institution. If additional institutions choose to offer these programs, a program committee will be established to evaluate the work annually. The commissioner's office has verified that these meet the criteria the Board established. These are provided to the committee for information purposes.

**Commissioner's Recommendations**

This is an information item.

**Attachments**

Animal Sciences
Controls Engineering Technology
Data Analytics
Fashion Merchandising and Development
Interior Design
Meat Services
Home Health Aide
Biotechnology
Construction Craft Skilled Laborer
Form Builder-Rough Carpenter (Highway)
Form Builder-Rough Carpenter
Heavy Equipment Operator
Medical Scribe
Nail Technician Instructor
Cabinetry (Secondary)
Well Control Supervisor
Well Control Workover Operator

| Animal Sciences | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 18 credits / 600 clock hours)* | | | |
| **Core (18 Credits/600 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| ANSC 1011 | Introduction to Veterinary Tech | 2 | 60 |
| ANSC 1111 | Patient Mgmt and Nutrition | 3 | 90 |
| ANSC 1201 | Vet Assist Clinical Sciences | 1 | 30 |
| ANSC 1301 | Vet Assisting Applications | 1 | 30 |
| ANSC 1401 | Emergency Critical Care/End of Life | 1 | 30 |
| ANSC 1501 | Clinical Procedures I | 1 | 30 |
| ANSC 1502 | Clinical Procedures II | 2 | 60 |
| ANSC 1503 | Clinical Procedures III | 3 | 90 |
| ANSC 2999 | Clinical Externship | 4 | 180 |
| | **TOTALS** | **18** | **600** |

**Animal Sciences**

FY2023 / 18 Credits (600 Clock-Hours)

**PROGRAM DESCRIPTION**

The Animal Sciences program provides students with hands-on training to develop the skills needed to work as support staff in veterinary clinics, shelters, or other animal-based institutions. Skilled and experienced instructors with a range of animal sciences backgrounds provide real-world training in relevant topics such as animal restraint, nursing care, radiology, lab procedures, blood collection, IV catheterization, dental cleanings, vaccines, physical exams, and client services. Students will also train in front office procedures. Students who complete this program will have the theoretical and practical foundation needed for work in a clinical setting.

Objectives:

- Safely restrain and work with a variety of small and large animals.
- Communicate with clients, faculty, veterinarians, and other veterinary staff using appropriate veterinary terminology.
- Demonstrate a strong knowledge of anatomy and physiology for various species encountered in a clinical setting.
- Perform appropriate care techniques based on the needs of the species and individual client.
- Perform routine lab procedures.

## COURSE DESCRIPTIONS

**Introduction to Veterinary Tech 2 Credits/60 Clock-Hours**

The Introduction to Veterinary Tech course provides a fundamental understanding of what a veterinarian assistant/pre-technician professional does to assist a veterinarian and other veterinary staff while helping animals in need. It covers the ethical and legal issues applicable to veterinary care. The course introduces students to the safety techniques needed when interacting with animals of various species. Students who complete this course can communicate with other professionals using correct terminology and are familiar with basic safety techniques necessary for their future work in a clinical setting.

Objectives:

- Define career expectations of veterinarian assistants.
- Identify ethical and legal issues in veterinary care.
- Perform proper safety techniques.
- Practice animal management and human interaction.
- Use correct medical terminology as it pertains to animal sciences.

**Patient Mgmt and Nutrition 3 Credits/90 Clock-Hours**

The Patient Mgmt and Nutrition course introduces students to essential skills needed to maintain gainful and satisfying employment in veterinary assisting careers. Students learn the basic anatomy and physiology of various species encountered in a veterinary practice. Common medical treatments for typical injuries and ailments of various animals are covered. Students also learn to understand and comprehend the reasons for animal behavior; the symptoms and signs to watch for in animal behavior; and how to individualize the care for each patient. Students who complete this course are prepared for an entry level position in the field. They also have the necessary knowledge and skills to participate in an externship.

Objectives:

- Demonstrate knowledge of anatomy and physiology.
- Evaluate diets for various animal species based on knowledge of nutritional needs.
- Perform safe, competent, and individualized care on various animal species.
- Perform accurate medical calculations.
- Describe behaviors of various animal species and how they affect care methods.

**Vet Assist Clinical Sciences 1 Credits/30 Clock-Hours**

The Vet Assist Clinical Sciences course provides students with knowledge and skills used in clinical settings for diagnosis and care of many conditions and diseases found in a variety of animal species. This course covers hematology and clinical chemistry for animals. Students learn specific microbiology and how to understand urinalysis for their patients. Parasites and their relationships with animals are covered. The course instructs students on the fundamentals of anesthesia and appropriate analgesics and

preventative medicine for animals. Students who complete this course have a strong theoretical foundation of chemical and biological information upon which they can build in their clinical courses.

Objectives:

- Demonstrate appropriate knowledge of hematology, hemostasis processes, and clinical chemistry.
- Demonstrate appropriate knowledge of microbiology, cytology, and urinalysis.
- Demonstrate appropriate knowledge of pathology and pharmacology in animals.
- Recognize parasites, their hosts, and the relationship between them.
- Explain principles of preventive medicine as it relates to animal sciences.
- Explain procedures for diagnostic imaging.
- Explain procedures for anesthesia and perioperative analgesia.

**Vet Assisting Applications 1 Credits/30 Clock-Hours**

The Vet Assisting Applications course provides students with the foundational knowledge needed to participate in labs in the Clinical Procedures courses. The course covers various animal organs and systems necessary to be ready to perform and assist in procedures as related to anatomy and physiology. Much of the course is also dedicated to introducing students to the techniques and equipment they will use in their other courses. Students who complete this course have a strong theoretical foundation of anatomy and clinical procedures upon which they can build in their clinical courses.

Objectives:

- Memorize anatomy and physiology of various species.
- Identify surgical instruments and their uses.
- Explain various surgical techniques.
- Explain various pain management techniques.
- Explain proper drug administration routes and techniques.

**Emergency Critical Care/End of Life 1 Credits/30 Clock-Hours**

The Emergency Critical Care/End of Life course introduces students to a variety of animals treated in a veterinarian practice. Knowledge from all previous courses is pulled together to prepare students for work in a professional setting. The course covers how to recognize and address the physical condition of an animal and begin the care process for a sick or wounded patient. Students who complete this course will have enough knowledge and practical experience to be ready for a position as a skilled assistant.

Objectives:

- Identify emergency situations and best practices for various injuries.
- Demonstrate procedures for fluid therapy and blood transfusions.
- Demonstrate knowledge of animal dentistry.
- Explain proper care and general grooming procedures.
- Identify breeds and classifications of various species.

**Clinical Procedures I** **1 Credits/30 Clock-Hours**

The Clinical Procedures I course provides students an introduction to basic skills in the classroom and practice laboratory. Students use the theoretical knowledge they have acquired in other courses in a practical setting to manage care for various species with uncomplicated conditions. The course covers additional safety measures and equipment use procedures. Students must also receive their CPR certification. Students who complete this course are able to apply their knowledge of basic anatomy and physiology in a clinical setting.

Objectives:

- Safely handle needles and syringes.
- Demonstrate proper animal restraint techniques.
- Perform hands on dissections on various animal body parts.
- Demonstrate techniques for evaluating animal reproductive health.
- Practice proper tube feeding techniques.
- Identify common pharmaceuticals used with animal treatment.
- Demonstrate animal hardware use (collars, carriers, muzzles, bags, gloves, etc).
- Practice proper radiology positioning and safe handling of lead gear.

**Clinical Procedures II** **2 Credits/60 Clock-Hours**

The Clinical Procedures II course builds on skills learned in Clinical Procedures I that are required in the animal care process in the classroom and practice laboratory. Students are given more opportunities to demonstrate proper animal restraint techniques and collect various types of samples from their patients. Students also gain experience in preparing patients for surgery. Students who complete this course are prepared for many of the day to day responsibilities of a skilled assistant.

Objectives:

- Demonstrate advanced animal restraint techniques.
- Demonstrate appropriate and accurate use of laboratory equipment and slides.
- Collect and evaluate animal tissue/fluid samples.
- Identify common parasites through fecal and external examination.
- Perform safe and appropriate injection techniques.
- Demonstrate surgical preparation procedures for various animal species.
- Demonstrate preparation and sterile handling of surgical instrument packs.

**Clinical Procedures III** **3 Credits/90 Clock-Hours**

The Clinical Procedures III course is the final clinical course for students and fills in any gaps they may have in their practical knowledge. The course provides students with the opportunity to strengthen animal care skills in the practice laboratory. The course brings together all of the theoretical and practical knowledge to prepare students to be comfortable with the range of duties they will face in a practical

setting. Students build on their knowledge of anatomy through a feline dissection in the lab. The course also covers some of the specialized techniques they may need for various species. Students who complete this course are prepared for a position as a skilled assistant.

Objectives:

- Demonstrate grooming procedures for various species.
- Demonstrate procedures used in ophthalmic and otic treatments.
- Demonstrate IV catheterization.
- Perform common bandaging.
- Perform specialized care treatments for birds.
- Interact comfortably with pocket pets.
- Perform feline dissection.

**Clinical Externship 4 Credits/180 Clock-Hours**

This Clinical Externship course gives students the opportunity to demonstrate the knowledge and skills they have obtained from their classroom and laboratory experiences. This course provides 180 hours of clinical experience in actual veterinarian animal care settings. Students have the opportunity to practice all the techniques and skills they have learned throughout the program with real patients and clients. Students who complete this course have real world experience applying what they have learned in a clinical setting.

Objectives:

- Demonstrate office skills involving scheduling, greeting, collecting accurate patient history, and following up with clients.
- Assist in physical examinations, demonstrate proper restraint techniques, and perform common bandaging.
- Demonstrate correct medical calculations.
- Demonstrate safe handling skills with needles/syringes and perform injections on animals.
- Perform accurate diagnostic imaging and demonstrate appropriate and accurate use of laboratory equipment.
- Demonstrate surgical preparation procedures for various animal species.
- Demonstrate appropriate grooming procedures for various species.
- Demonstrate IV catheterization.

| Controls Engineering Technology | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 20 credits / 600 clock hours)* | | | |
| **Core (14 Credits/420 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| CTRL 2000 | Industrial Networking Basics | 1 | 30 |
| CTRL 2050 | Vision Systems Basic | 1 | 30 |
| CTRL 2100 | Programmable Logic Controllers 2 | 3 | 90 |
| CTRL 2150 | Human Machine Interface (HMI) Programming | 2 | 60 |
| CTRL 2200 | Industrial Networking Lab | 2 | 60 |
| CTRL 2250 | Servo Motors and Drives | 1 | 30 |
| CTRL 2800 | Integration Capstone | 4 | 120 |
| | **TOTALS** | **14** | **420** |
| **Elective (6 Credits/180 Clock-Hours Required)** | | **Credits** | **Clock-Hours** |
| CTRL 2300 | Programmable Logic Controllers 3 | 3 | 90 |
| CTRL 2320 | Vision Systems Advanced | 1 | 30 |
| CTRL 2420 | Programmable Logic Controller Platforms | 1 | 30 |
| CTRL 2440 | HMI Platforms | 1 | 30 |
| CTRL 2460 | Robot Platforms | 1 | 30 |
| CTRL 2480 | Vision Platforms | 1 | 30 |
| CTRL 2500 | FANUC Basic Programming | 1 | 30 |
| CTRL 2550 | FANUC ROBOGUIDE Simulation Software | 2 | 60 |
| CTRL 2620 | Robot Vision and Safety | 1 | 30 |
| CTRL 2700 | FANUC Advanced Programming | 1 | 30 |
| CTRL 2750 | Manufacturing Analytics | 2 | 60 |
| CTRL 2901 | Special Apps for Controls | 6 | 180 |

## Controls Engineering Technology

FY2023 / 20 Credits (600 Clock-Hours)

### PROGRAM DESCRIPTION

The Controls Engineering Technology program prepares qualified students for advanced work as Control System Technicians in an automated manufacturing environment. This certificate provides hands-on training in Programmable Logic Controllers (PLCs), industrial robots, industrial networking, servo system programming, vision systems, and Human Machine Interface (HMI) programming. Students work with a teaching staff of industry professionals who emphasize hands-on instruction and provide competency-based training based on industry input for best practices and technological relevance. There is a high demand for employees with these specialized skills.

Objectives:

- Build an operational industrial network containing computers and control devices.

- Program a process using a common PLC.
- Design and program an HMI screen to interface with a PLC and control a process.
- Program a servo-driven process with a PLC.
- Identify, locate, communicate with other devices, and inspect two different parts using machine vision.
- Demonstrate the ability to successfully build a project that integrates multiple control topics.

**COURSE DESCRIPTIONS**

**Industrial Networking Basics 1 Credits/30 Clock-Hours**

The Industrial Networking Basics course introduces important Ethernet and TCP/IP concepts and terminology. It teaches students how to implement basic networking concepts. It also provides essential information about the industrial protocols and topology. This course covers Ethernet basics and the concepts necessary for an industrial network. The course includes switch configuration, power over Ethernet, addressing, and wireless Ethernet. Students who complete this course have an understanding and grounding in the basics of industrial networking.

Objectives:

- Describe basic network configuration and common networking communications protocols.
- Use basic networking hardware, software, and tools and Power over Ethernet (PoE) in a network application.
- Build and test Ethernet cables.
- Configure a wireless access point.
- Discover and assign Internet Protocol (IP) addresses for various industrial control components.
- Set up a complete Industrial Ethernet network.

**Vision Systems Basic 1 Credits/30 Clock-Hours**

The Vision Systems Basic course introduces students to the Cognex Insight Easy Builder and Spreadsheet application interface with an additional emphasis on lighting, lenses, and filters. This course focuses on getting the most from the In-Sight Explorer spreadsheets interface and teaching users how to walk through the process of setting up a vision application using spreadsheet programming best practices. This course covers the use of advanced tools and tools recently added to the spreadsheet environment. Students who complete this course can use basic vision systems.

Objectives:

- Identify vision hardware and connection, parts using pattern matching and Logic, and presence or absence of feature using histogram tools.
- Convert pixels to common measurements using calibration tools.
- Identify irregular shapes using blob tools and image filters.
- Configure input and output signals and demonstrate their use.

- Send process results to external devices.
- Create a custom interface for pass/fail results.
- Deploy application using simple interface and advanced interface.
- Demonstrate use of multiple lighting principles and techniques.

**Programmable Logic Controllers 2 3 Credits/90 Clock-Hours**

The Programmable Logic Controllers 2 course introduces students to the Studio 5000 Logix Designer (previously known as RSLogix 5000) and the CompactLogix PLC. It covers how to program using ladder logic for multiple labs based on industrial applications. This course teaches how to wire, program, and troubleshoot various systems, and how to program a process on an actual machine as the final project. Demonstrates the ability for proper PLC writing and programs a complete process from scratch. Students who complete this course are able to apply more complex logic to controllers.

Objectives:

- Connect to and configure a Programmable Logic Controller (PLC) using PLC programming software.
- Use tags, subroutines, data types, arrays, and sequencer code structure in programmable controller programming.
- Use input and output instructions, timers, counters, math instructions, and compare instructions in programmable logic controller programming.
- Connect and configure input and output (I/O) expansion cards, both local and remote.
- Demonstrate proper PLC wiring.
- Program a complete process from scratch.

**Human Machine Interface (HMI) Programming 2 Credits/60 Clock-Hours**

The Human Machine Interface (HMI) Programming course introduces students to HMIs. HMI operator stations have become commonplace in modern industry because they eliminate wiring, enable operator functions to be modified in software, and provide the ability for the operator to monitor Programmable Logic Controller (PLC) operations data. This course covers how to convert a PLC program into a graphic HMI Panel. This course teaches application editing, tags and communications, creating data logs, input and output objects, local messages and alarms, diagnostics, and information messages. Students who complete this course can program HMIs to monitor PLC operations data.

Objectives:

- Describe the use and need for Human Machine Interface (HMI) in an automation environment.
- Interface an HMI with a Programmable Logic Controller (PLC) to simulate a virtualized system.
- Create graphic displays.
- Build and animate an interactive graphic display.
- Configure HMI tag-based alarms.

- Create and configure a historical trend.
- Create and view a data log model.
- Use a graphic HMI panel to control a process on an actual machine.

**Industrial Networking Lab** **2 Credits/60 Clock-Hours**

The Industrial Networking Lab course teaches students how to use industrial networks. Device communication can be one of the most challenging aspects of any automated system. In this course, students will network PLCs, remote I/O blocks, sensor systems, servo drives, and robots so they are able to consistently pass information between devices. This is done through configuring network communication between PLCs and I/O blocks, sensor systems, servos, and robots. Students who complete this course can set up and maintain an industrial network.

Objectives:

- Apply Industrial Networking concepts to devices used in industry.
- Set up industrial grade networking hardware.
- Configure network communication between Programmable Logic Controllers (PLCs), input and output (I/O) blocks, sensor systems, servos, and robots.
- Use standard PLC sequencer logic to control a process.
- Wire I/O and PLC network connections.
- Set up a remote connection to a PLC.

**Servo Motors and Drives** **1 Credits/30 Clock-Hours**

The Servo Motors and Drives course introduces students to servomechanisms. It covers the basic operation of a motion control application. Introduces how to program a servo drive and motor to perform basic motion commands. It teaches students how to wire and program an electric motor drive to be self-controlled within a process. This course covers how to write a Programmable Logic Controller (PLC) program to perform motion control with multiple axes. Students who complete this course are able to write a PLC program.

Objectives:

- Describe the components of a servomechanism.
- Use a network to connect a PLC to motion control modules.
- Configure motion modules in a PLC.
- Write a PLC program to perform motion control.
- Write a PLC program to perform motion control with multiple axes.

**Integration Capstone** **4 Credits/120 Clock-Hours**

The Integration Caption course allows students to build and operate a system integrating all the elements they have learned. This course will involve many aspects of an industrial control system. This includes

safety systems, risk assessments, and code diagrams. It covers how to integrate the following items: Programmable Logic Controller, Human Machine Interface, servo drive, network switch, vision system, safety system, and industrial robotic arm. Instructor approval is required for the final project. Students with jobs may propose an on-the-job project contingent on instructor and employer approval. Students who complete this course show they can integrate all the elements of controls engineering into a single project.

Objectives:

- Demonstrate advanced troubleshooting techniques
- Demonstrate ability to build and operate a system.
- Build a project using advanced programming in one or more of the following: Programmable Logic Controllers (PLC), Human Machine Interface (HMI), robots, servos, safety equipment, industrial networking equipment.
- Demonstrate a structured coding method.
- Report the project while following instructor reporting requirements.

**ELECTIVE COURSES**

**Programmable Logic Controllers 3 3 Credits/90 Clock-Hours**

The Programmable Logic Controllers 3 course expands on the Programmable Logic Controller 2 course. This course covers operation and application of safety programmable logic controllers, safety relays, safety I/O and risk assessments. Teaches how to program a system using Proportional Integral Derivative control methods. Introduces Structured Text and Function Block programming as well as Add-On instructions. Teaches how to program using a structured programming method. Students who complete this course are able to program advanced logic into PLCs.

Objectives:

- Write a Programmable Logic Controller program that uses the Proportional Integral Derivative method to control a process.
- Program a safety Programmable Logic Controller using regular and safety I/O.
- Use an external safety relay in a Programmable Logic Controller application.
- Perform a risk assessment.
- Use function block and structured text in basic Programmable Logic Controller projects.
- Use Add-On Instructions (AOI) to enhance a Programmable Logic Controller program.
- Program a Programmable Logic Controller using a structured method.

**Vision Systems Advanced 1 Credits/30 Clock-Hours**

The Vision Systems Advanced course teaches students about vision systems. This course covers and applies advances in deep learning for inspection and quality control applications, as well as character

recognition, tool applications, and more advanced lighting techniques. The course teaches students how to build and execute a custom script and advanced lighting, including off axis, dome, lighting controllers, and strobing. Students who complete this course can alter and operate visions systems in an advanced setting.

Objectives:

- Deploy VIDI deep learning tools.
- Apply advanced find tools.
- Identify text using OCR text recognition tools.
- Identify inconsistent/flexible features using advanced edge inspection tools.
- Identify unique colors using color tools.

**Programmable Logic Controller Platforms 1 Credits/30 Clock-Hours**

The Programmable Logic Controller Platforms course helps students to practice using Programmable Logic Controller (PLC) platforms. This course covers how to choose a PLC platform and how to learn the software and hardware of that system. It also goes over how to set up, configure, and program this PLC in a variety of labs simulating industrial applications to provide students an opportunity to develop their skills. Students who complete this course demonstrate an understanding and ability to program and troubleshoot PLC platforms.

Objectives:

- Use a Programmable Logic Controller from a selected manufacturer.
- Perform proper wiring between I/O and Programmable Logic Controller on a selected platform.
- Perform Programmable Logic Controller programming on a selected platform.
- Use Programmable Logic Controller programming software to create programs on a selected platform.
- Use Programmable Logic Controller programming software to edit programs on a selected platform.

**HMI Platforms 1 Credits/30 Clock-Hours**

The HMI Platforms course covers how to choose a robot platform from a variety of available Human Machine Interface (HMI) systems. It allows students to perform fundamental HMI tasks with the selected unit. This course also introduces students to the interface, tools, and overall operation of the system from manuals and resources provided by the various vendors, with extensive instructor guidance. Students who complete this course are able to organize, operate, and troubleshoot HMI platforms.

Objectives:

- Use a Human Machine Interface (HMI) or Supervisory Control and Data Acquisition (SCADA) software from a selected manufacturer.

- Configure communication between the selected platform and a Programmable Logic Controller (PLC).
- Create graphic displays on a selected platform.
- Build an interactive graphic display on a selected platform.
- Animate an interactive graphic display on a selected platform.

**Robot Platforms** **1 Credits/30 Clock-Hours**

The Robots Platforms course covers how to choose a robot platform from a variety of available Human Machine Interface (HMI) systems and perform fundamental HMI tasks, such as creating, modifying, and executing various programs. With instructor guidance, the course introduces students to the interface, tools, and overall operation of the system from vendor provided manuals and resources. Students who complete this course demonstrate how to operate, alter, maintain, and troubleshoot robot platforms and perform HMI tasks.

Objectives:

- Power up and jog the robot.
- Recover from common program and robot faults.
- Execute production operations.
- Create, modify, and execute a material handling program.
- Monitor, force, and simulate Input and Output signals.
- Backup and restore individual programs and files.

**Vision Platforms** **1 Credits/30 Clock-Hours**

The Vision Platforms course covers how to choose a vision platform from available industrial vision systems and perform fundamental tasks using that system. With instructor guidance, it covers the interface, tools, and overall operation of the system from vendor provided manuals and resources. It teaches students how to deploy applications using simple and advanced interfaces and send process results to external devices and create a custom interface for pass/fail results. Students who complete this course can help employers choose, establish and maintain vision platforms.

Objectives:

- Identify vision hardware and connections.
- Convert pixels to common measurements using calibration tools.
- Setup software interface and acquire first images.
- Identify parts using pattern matching and logic.
- Identify presence or absence of features using histogram tools.
- Identify part edges using edge tools.
- Identify irregular shapes using blob tools and image filters.
- Configure input and output signals then demonstrate their use.

**FANUC Basic Programming 1 Credits/30 Clock-Hours**

The FANUC Basic Programming course covers the tasks that an operator, technician, engineer, or programmer needs to set up and program a FANUC Robotics Handling Tool Software Package. Students practice programming hands-on pendant labs with industrial grade FANUC LR Mate 200i D manipulators and FANUC System R-30i B Mate Controllers. It introduces multiple coordinate systems to power up and jog the robot and covers how to create and execute MACROs. Students who complete this course can perform basic programming on FANUC devices.

Objectives:

- Power up and Jog the robot using multiple coordinate systems.
- Recover from common program and robot faults.
- Execute production operations.
- Create, modify, and execute a material handling program.
- Create and execute MACROs.
- Monitor, Force, and Simulate Input and Output Signals.
- Apply positional offsets in a material handling operation.
- Backup and restore individual programs and files.

**FANUC ROBOGUIDE Simulation Software 2 Credits/60 Clock-Hours**

The FANUC ROBOGUIDE Simulation Software course introduces procedures for creating a HandlingPRO virtual work cell. When completed, the work cell created will contain a FANUC robot with end-of-arm tooling, one or more fixtures for holding a part, and a robot TPP Program which moves the part from one fixture to the other. The course also covers various robot programs and how to run them. Students who complete this course demonstrate the ability to work with FANUC robots.

Objectives:

- Create a program using Draw Features on Part.
- Create a program to pick and place random parts.
- Create an AVI of the work cell.
- Add a second robot to the work cell.
- Setup extended axis and add 2nd & 3rd motion group, then create machines for the 7th axis and motion groups.
- Create a program that will trace lines and move blocks.

**Robot Vision and Safety 1 Credits/30 Clock-Hours**

The Robot Vision and Safety course covers the basic tasks and procedures required for an operator, technician, engineer, or programmer to set up, teach, test, and modify iRVision applications and FANUC Dual Check Safety (DCS) software. Robot vision systems are among the most advanced components in industry. Students who complete this course can identify the components of a vision system, install vision

hardware, develop an application, program the robot, perform error recovery procedures, and follow recommended safety practices.

Objectives:

- View and/or change robot and computer parameters to facilitate access to the robot's web page.
- Perform an inspection vision process.
- Understand basic vision concepts and lighting.
- Master a robot using vision mastering.
- Create tool frame for the robot applicator and user frames necessary for use with the vision system.
- Set up and modify Speed Check parameters and DCS Safe I/O parameters.

**FANUC Advanced Programming 1 Credits/30 Clock-Hours**

The FANUC Advanced Programming course helps students enhance their skills and knowledge from basic programming courses to develop a more complex scenario. FANUC robots are among the most widely used robots in industry. Students will be given a hypothetical example work cell. They will then be given the task of creating all the necessary programs to deal with multifaceted issues using advanced programming techniques. Students who complete this course are able to perform advanced programming and troubleshooting for FANUC robots.

Objectives:

- Manipulate frames related to programming issues.
- Demonstrate advanced program control structures.
- Establish PLC Robot communication using User Operator Panel.
- Pull parts through a pre-defined system.
- Set up multi-tasking operations.
- Design and implement methods for Error Recovery.

**Manufacturing Analytics 2 Credits/60 Clock-Hours**

The Manufacturing Analytics course provides students with experience working as a data practitioner in the field of manufacturing. Utilizing real-world situations, they gain experience with the types of tasks which are required of data practitioners working in manufacturing. Students go through the data life cycle with multiple sets of data and different situations that can arise in manufacturing situations. Students optimize manufacturing data and practice predictive maintenance. They access a Programmable Logic Controller (PLC)-driven manufacturing system to a database and process that data as though in a live working environment utilizing data analysis programs and techniques. Students who complete this course are able to work with manufacturing data.

Objectives:

- Analyze data from multiple real-world scenarios.

- Present findings using a visualization tool.
- Setup data transfer from a Programmable Logic Controller (PLC)-driven manufacturing system to a database.
- Analyze data in a manufacturing optimization scenario.
- Analyze data in a manufacturing predictive maintenance scenario.

**Special Apps for Controls** **6 Credits/180 Clock-Hours**

The Special Apps for Controls course provides students unique controls skill development identified as an immediate need in the current occupational industry or as needed for prerequisite training in the Controls Engineering Technology certificate. Specific course objectives will be documented and when possible, a descriptive title will be provided for the student transcript. Credit will be given in 30 hour increments up to a maximum of 180 hours. Course objectives will be determined on an individual course basis and will be made known to the student upon instructor approval of the course to be taken or the skill to be developed.

| **Data Analytics** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 15 credits / 450 clock hours)* | | | |
| **Core (11 Credits/330 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| DATA 1010 | SQL Fundamentals | 2 | 60 |
| DATA 1020 | Data Visualization Fundamentals | 2 | 60 |
| DATA 1030 | Python Programming | 3 | 90 |
| DATA 1040 | Advanced Python for Data Analytics | 2 | 60 |
| DATA 2050 | Capstone Project I | 2 | 60 |
| | **TOTALS** | **11** | **330** |
| **Core (4 Credits/120 Clock-Hours Required)** | | Credits | **Clock-Hours** |
| BTEC 2140 | Spreadsheets II | 2 | 60 |
| DATA 1035 | Machine Learning (Python) | 2 | 60 |
| DATA 1050 | Web Marketing Analytics | 2 | 60 |
| DATA 1065 | Manufacturing Analytics | 2 | 60 |
| DATA 1070 | R for Data Analytics | 2 | 60 |
| DATA 2010 | Advanced SQL | 2 | 60 |
| DATA 2020 | Advanced Data Visualization | 2 | 60 |
| DATA 2055 | Capstone Project II | 2 | 60 |
| DATA 2901 | Special Applications | 4 | 120 |
| DATA 2999 | Data Analytics Externship | 3 | 135 |

**Data Analytics**

FY2023 / 15 Credits (450 Clock-Hours)

## PROGRAM DESCRIPTION

The Data Analytics program prepares both experienced and inexperienced students to become skilled data practitioners in business, manufacturing, management, and marketing environments. Students gain experience in industry standard software for working with data, coding, and creating data visualizations through projects. Projects are designed to prepare students for the types of projects they will encounter throughout their career. This certificate introduces students to the knowledge, skills, abilities, and tools relevant to entry-level data analytics, such as initiating data projects, sourcing data, transforming data, analyzing data, and presenting data.

Objectives:

- Extract, collect, clean, and test data.
- Transform data by merging and splitting data sets.
- Analyze data by applying questions to data, identifying anomalies, and explaining why the anomalies occur.
- Communicate data stories through the production and reporting of clear data visualizations, dashboards, reports, charts, and graphs.
- Propose, complete, and report on multiple projects using real-world data.

## COURSE DESCRIPTIONS

**SQL Fundamentals** **2 Credits/60 Clock-Hours**

The SQL Fundamentals course familiarizes students with concepts of relational databases and how to access data using SQL queries. A series of database application projects will teach students to pull, filter, aggregate, and join data. Students also learn how to restore a database and save queried data to a database. They also learn basic navigation within the database. Students build working knowledge and hands-on familiarity with SQL using industry software. Students who complete this course are able to work with SQL databases.

Objectives:

- Connect to a SQL Server.
- Restore a database from a backup file.
- Source data from a SQL server.
- Save queried data to a database.
- Demonstrate proficiency with basic queries, filters, aggregates, and joins to pull relevant data.

**Data Visualization Fundamentals** **2 Credits/60 Clock-Hours**

The Data Visualization Fundamentals course teaches key principles in analyzing data using visualizations and best practices in presenting data to stakeholders through a project-based curriculum. Students learn foundational principles of data visualization and how to tell a story using data as well as how visualizations fit into the data cycle. The students learn to use Tableau and Microsoft Power BI to produce multiple visualizations as well as best practices for clear and accurate visuals. Students who complete this course are able to apply data visualization principles using various software.

Objectives:

- Analyze existing visualizations to assess proper use of sorting, labeling, dimensions, context, and structure.
- Apply principles of visualization to tell an informative story using data.
- Produce basic visualizations using data visualization software.
- Demonstrate proficiency in pulling data from a SQL database into data visualization software.
- Demonstrate the ability to produce different visualizations using data from a SQL database.

**Python Programming** **3 Credits/90 Clock-Hours**

The Python Programming course introduces students to the Python programming language. Topics include basic Python syntax, procedural programming concepts, data types, decision and control structures, working with common Python libraries, and creating and running functions. Students use both the Command Prompt and industry standard integrated development environments (IDEs) to create and run their Python code. Students completing this course are able to perform basic tasks in Python related to the work of an entry-level data practitioner.

Objectives:

- Install Python.
- Write basic Python code to structure, clean, and analyze data.
- Demonstrate competency with conditionals for decision and control structures and data modification.
- Demonstrate proficiency with for loop and while loop coding.
- Demonstrate proficiency with data types and functions for analysis and use of data.

**Advanced Python for Data Analytics** **2 Credits/60 Clock-Hours**

The Advanced Python for Data Analytics course builds upon the principles learned in Python Programming. In this course, students learn to access remote databases using Python. Students then use the data they have pulled to create, manipulate, and filter data using multiple industry standard libraries essential for data analytics. Students who complete this course are able to use a variety of Python libraries in the data analytics industry to collect, clean, analyze, and present data.

Objectives:

- Connect to and pull data from remote databases.
- Demonstrate proficiency in regular expressions to extract and manipulate text data.
- Import and export data.
- Create, manipulate, and filter data frames.
- Create analytical reports
- Create visualizations using Python
- Generate summary statistics to quickly analyze data.

**Capstone Project I** **2 Credits/60 Clock-Hours**

In the Capstone Project I course, students find and use their own dataset and go through the complete data cycle. They collect, clean, transform, analyze, and visualize data using the tools and techniques learned throughout the program. Students use technology and programming skills learned in the program to clean and manipulate data in a professional manner. Programs and processes learned throughout the program are used to move step-by-step through analysis processes and procedures with a focus on industry accepted best practices. They then present their findings using a visualization tool of their choice. Students who complete this course are able to complete a basic data-based project from the proposal stage all the way to presenting their findings.

Objectives:

- Submit a formal proposal for a project of the student's choice.
- Set and meet project deadlines.
- Apply techniques learned throughout the program to collect, clean, transform, analyze, and visualize real-world data.
- Create a written report of the findings of the project
- Present findings using a visualization tool.

**ELECTIVES (4 Credit hours/120 Clock-hours Required)**

**Spreadsheets II** **2 Credits/60 Clock-Hours**

The Spreadsheets Apps II course is a continuation from Microsoft Spreadsheets I and is designed to provide students with an advanced knowledge of formatting techniques, spreadsheet functions, analysis tools, and management techniques.

Objectives:

- Apply advanced formatting techniques, functions, and formulas.
- Create, format, and filter Tables and PivotTables.
- Use data analysis features to create scenarios, reports, and variable data tables.
- Protect and share worksheets and workbooks.
- Automate repetitive tasks and customize Excel workbooks.

- Import, export, and distribute data.

**Machine Learning (Python) 2 Credits/60 Clock-Hours**

The Machine Learning (Python) course teaches the basics of machine learning and how to use industry standard Python libraries. Students will learn to pre-process data, the differences between various algorithms, and ways to validate a model. The differences between supervised, unsupervised, and reinforcement algorithms will be detailed, as well as the appropriate uses of each. The course also introduces students to complications that arise when interpreting the output of a machine learning model. Students who complete this course are able to find solutions to a range of challenges faced in predictive data analysis using machine learning.

Objectives:

- Demonstrate knowledge of the differences between major machine learning algorithms.
- Demonstrate proficiency with Python to pre-process data to prepare for use in machine learning.
- Train multiple machine learning models using real-world data.
- Demonstrate accepted methods of model validation.
- Utilize machine learning algorithms to process data for pattern and problem detection.

**Web Marketing Analytics 2 Credits/60 Clock-Hours**

The Web Marketing and Analytics course provides students with experience working with web marketing data through common web scraping and analytical techniques. This combines with specific data and manufacturing analytics processes and allows students to gain experience conducting data analysis on marketing specific datasets. Students will go through the data cycle using data obtained through web-accessed real-world scenarios. Students who complete this course are able to work with web marketing data for clients.

Objectives:

- Apply techniques learned throughout the program on data sets from the field of web marketing.
- Analyze data from multiple real-world scenarios.
- Demonstrate proficiency with visualizations to describe the data and present findings.
- Use APIs to gather and process data.
- Collect data from the web using web scraping techniques.

**Manufacturing Analytics 2 Credits/60 Clock-Hours**

The Manufacturing Analytics course provides students with experience working as a data practitioner in the field of manufacturing. Utilizing real-world situations, they gain experience with the types of tasks which are required of data practitioners working in manufacturing. Students go through the data cycle with multiple sets of data and different situations that can arise in manufacturing situations. Students optimize manufacturing data and practice predictive maintenance. They access a Programmable Logic

Controller (PLC)-driven manufacturing system to a database and process that data as though in a live working environment utilizing data analysis programs and techniques. Students who complete this course are able to work with manufacturing data.

Objectives:

- Apply techniques learned throughout the program on datasets from the field of manufacturing.
- Analyze data from multiple real-world scenarios.
- Present findings using a visualization tool.
- Setup data transfer from a Programmable Logic Controller (PLC)-driven manufacturing system to a database using Kepware.
- Analyze data in a manufacturing optimization scenario.
- Analyze data in a manufacturing predictive maintenance scenario.

**R for Data Analytics** **2 Credits/60 Clock-Hours**

The R for Data Analytics course teaches basic statistical analysis and visualization techniques using R. Students learn R syntax and how it differs from Python and other languages in data analysis. Students learn file input and output, data manipulation, and a variety of visualization techniques using R throughout the data cycle. They take a dataset through the data cycle using R and analyze the value of R against their prior experience with Python and SQL. Student installs multiple R packages and utilizes them within the scope of the course to experience and analyze how these additional packages affect the process of data analysis in R. Students who complete this course are able to use R to perform basic statistical analyses and visualization techniques.

Objectives:

- Identify the basics of coding in R.
- Import data into R.
- Install the package collection tidyverse and demonstrate basic use.
- Manipulate data using dplyr.
- Visualize data in ggplot2.
- Analyze data using R.

**Advanced SQL** **2 Credits/60 Clock-Hours**

The Advanced SQL course is designed to build familiarity with Entity-Relationship (E-R) database modeling, database creation, database maintenance, and database optimization. Database architectures including the client/server model and distributed database model are presented. Students learn the basics of database engineering and the problems that can arise without proper maintenance. Best practices of database engineering are reviewed and students gain experience on a live SQL database. Students who complete this course are able to use advanced SQL for data analysis.

Objectives:

- Create a SQL database using (industry standard software).
- Structure a database using industry optimization techniques.
- Insert data into a student created database.
- Identify proper database maintenance techniques.
- Interpret real-world situations to demonstrate use of industry best practices and ethics.

**Advanced Data Visualization 2 Credits/60 Clock-Hours**

The Advanced Data Visualization course teaches advanced techniques using Tableau and Microsoft Power BI for managing, processing, analyzing, and visualizing data. Students learn advanced techniques to import and manipulate data through the data cycle. They also create, format, and annotate visualizations using real-world scenarios and datasets. Further analysis of strengths and weaknesses of industry-utilized visualizations gives experience preparing data for stakeholders and explaining details within those visualizations. Students who complete this course are able to apply advanced data visualization techniques to a variety of scenarios.

Objectives:

- Import data from a live SQL database into data visualization software.
- Create visualizations that tell a story about data using data visualization software.
- Use annotation tools.
- Use real-world situations and data to create data visualizations.
- Refine visualizations for presentation to stakeholders.
- Present data visualization project and answer stakeholder questions.

**Capstone Project II 2 Credits/60 Clock-Hours**

In the Capstone Project II course, students expand on their project completed in Capstone Project I by further refining stage(s) in the data cycle such as: data collection, data cleaning, data transformation, data visualization, and/or data storytelling. They analyze strengths and weaknesses in the project and assess changes that would improve the quality and clarity of the work. They will decide how best to expand and/or refine their data project and then present to their peers that analysis. They show their analysis of the project and describe how they expanded upon their data project from Capstone I. Students who complete this course are able to complete an advanced data-based project from the proposal stage all the way to presenting their findings

Objectives:

- Apply techniques learned throughout the program to collect, clean, transform, and analyze real world data.
- Present findings using a visualization tool.
- Demonstrate industry best-practices and ethics throughout.

- Report on the differences between both capstone projects and the reasons those changes were made.
- Explain key decisions made and significant findings.

**Special Applications 4 Credits/120 Clock-Hours**

The Special Applications course gives students the opportunity to expand their knowledge in a specific industry or skill. The student participates in defining how this information applies to data analytics and demonstrates how the skills learned within the Data Analytics program relate to this knowledge or skill. Student also provides context and industry relevance to provide value to the experience. Student compiles a report on the data analysis opportunities observed throughout the course and how their data analytics knowledge affects their understanding of the situation. Students who complete this course are able to expand their knowledge in a specific industry or skill related to data analytics.

Objectives:

- Illustrate context of industry-relevance and data analysis opportunities.
- Define data analysis opportunities within a specific industry or skill.
- Report on observed data analysis opportunities.
- Identify the data analysis tool(s) best used within the scope of the course.
- Complete all other objectives in the course as defined by the instructor.

**Data Analytics Externship 3 Credits/135 Clock-Hours**

The Data Analytics Externship course gives students real-world experience in a work-based environment. Entry-level data practitioner skills such as data collection, data cleaning, data transformation, data visualization, and/or data storytelling are utilized in a non-simulated work environment. Students coordinate with faculty and business partners to define or analyze key goals and scope of the externship as well as stakeholder needs. At the end of their externship, students present an example of what they have completed within the time frame of the externship. Work-based activities will be provided by cooperating business. Students who complete this course have real world experience applying what they have learned throughout their time in the program.

Objectives:

- Apply techniques learned throughout the program to collect, clean, transform, and analyze real-world data.
- Present findings using a visualization tool.
- Utilize the data cycle in a live work-based environment.
- Use company defined programs and data to complete job duties within the scope of data analytics-related work.
- Demonstrate ability to follow reasonable employer directions and/or mandates.

| Fashion Merchandising and Development | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 30 credits / 900 clock hours)* | | | |
| **Core (26 Credits/780 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| FASH 1101 | Introduction to Fashion | 2 | 60 |
| FASH 1105 | Apparel Industry | 3 | 90 |
| FASH 1301 | Strategies of Selling | 2 | 60 |
| FASH 1350 | Social Media Marketing | 1 | 30 |
| FASH 1400 | Textiles | 2 | 60 |
| FASH 1500 | Fashion Styling | 2 | 60 |
| FASH 1512 | Professional Development | 2 | 60 |
| FASH 1610 | Promotional Event Planning | 3 | 90 |
| FASH 1700 | Visual Merchandising | 3 | 90 |
| FASH 1721 | Beginning Sewing | 3 | 90 |
| FASH 2300 | Product Development | 3 | 90 |
| | **TOTALS** | **26** | **780** |
| **Elective (4 Credits/120 Clock-Hours Required)** | | **Credits** | **Clock-Hours** |
| ACCT 2110 | Introduction to Entrepreneurship | 2 | 60 |
| FASH 1620 | Digital Illustration | 3 | 90 |
| FASH 1640 | Editorial Production and Design | 1 | 30 |
| FASH 1780 | Advanced Sewing | 3 | 90 |
| FASH 2510 | Historic Costume | 2 | 60 |
| FASH 2901 | Special Applications FASH | 4 | 120 |
| FASH 2998 | Fashion Merchandising Externship | 2 | 90 |
| MDTC 1020 | Graphic Design Applications I | 3 | 90 |

## Fashion Merchandising and Development

FY2023 / 30 Credits (900 Clock-Hours)

### PROGRAM DESCRIPTION

Fashion Merchandising and Development prepares students with the knowledge and skill-set necessary to be successful in the Fashion Industry in the following categories: retailing, promotion, visual merchandising, design, and entrepreneurship. Students work with a teaching staff of industry professionals that emphasize hands-on instruction and provide competency-based training. From working on a full-scale fashion show production to creating window displays or constructing garments, students work in a hands-on environment that allows them to explore their creativity while obtaining the skills necessary to enter the workforce in the fashion and associated industries.

Objectives:

- Demonstrate proficiency in marketing concepts, retail merchandising, selling techniques, styling methods, and visual presentation through hands-on assessments and creation of projects.
- Identify elements of marketing and selling.

- Develop promotional and event production skills through planning, producing and promoting a full-scale fashion show production.
- Demonstrate effective use of the principles and elements of design by creating products, presentations, and displays through comprehensive assignments, projects, and tests.
- Show growth in professional development as it relates to communication skills, presentation methods, time management, and organization through instructor observations, evaluations, and an industry related internship.

**COURSE DESCRIPTIONS**

**Introduction to Fashion 2 Credits/60 Clock-Hours**

The Introduction to Fashion courses covers the diverse careers found in the fashion industry within the areas of design, business, inspiration and conception, and retail. This course develops an economic outlook of the fashion industry and researches current events and other news in the fashion industry. Students identify similarities and differences between multiple careers while researching the job details and experience or education required to obtain a career in that field. Students who complete this course are able to identify the basic skills necessary for a career in the fashion industry.

Objectives:

- Identify current trends and newsworthy events or developments in the fashion industry.
- Compare and contrast multiple careers to identify similarities and differences between them.
- Develop an economic outlook of the fashion industry and current trends
- Identify personal skills and strengths that are suited for a particular career and research a current job opportunity in that area.
- Outline the educational and professional experience required to obtain a career.

**Apparel Industry 3 Credits/90 Clock-Hours**

The Apparel Industry course introduces the apparel industry through construction details, apparel terminology, designer research, and presentation techniques, from production to marketing. This course covers how historical events from the 20th century influences these areas and how fashion history showcases itself in the apparel industry today. It introduces fashion designers from different parts of the world and their impact on the industry. Students who complete this course demonstrate an understanding of the history of fashion and how it impacts the fashion industry today.

Objectives:

- Identify key apparel styles and construction details using correct terminology.
- Identify how designers from all over the world impact the industry.
- Describe how important historical events and designers have influenced the apparel industry over time.
- Design an apparel collection based on research and trend forecasting for a specific target market.

- Show skills learned through a 10-piece apparel collection.

**Strategies of Selling 2 Credits/60 Clock-Hours**

The Strategies of Selling course introduces the important areas of selling, including buying behaviors and motives, successful sales techniques, and preparation for sales presentations. This course covers how to effectively approach and communicate with customers and clients to identify their needs, build trust, close sales, and develop a relationship to encourage their return. The course reviews the mathematics of selling and their applications in areas such as balancing cash drawers, making change, and calculating discounts and commission. Students who complete this course are able to effectively work with clients in a sales environment.

Objectives:

- Identify different types of customers and how to cater to their needs.
- Identify buying behaviors.
- Communicate effectively with customers and clients.
- Perform an effective sales presentation for a specific merchandise category.
- Calculate sales transactions, decimals, discounts, and other calculations based on selling scenarios provided.

**Social Media Marketing 1 Credits/30 Clock-Hours**

The Social Media Marketing course introduces the core concepts of the influencer world and social media marketing, helping students understand what leads to a successful social media marketing plan with the goal to develop a marketing plan for a new or existing business or brand. This process will include the following components: conducting a business/product needs analysis, developing a strategy, generating content, creating a posting calendar, and measuring the effectiveness of the strategy where possible. Students who complete this course are able to develop and implement a social media marketing plan for a business or brand.

Objectives:

- Conduct research to identify the needs of a new or existing business.
- Develop a social media marketing plan to satisfy business needs and goals.
- Design content for selected social media platforms through text, print, and visual mediums.
- Present marketing plan to peers for feedback.
- Measure effectiveness of marketing strategy.

**Textiles 2 Credits/60 Clock-Hours**

The Textiles course introduces fibers in order to understand the characteristics, properties, and care of major textiles. This course covers appropriate types of fibers, fabrics, and construction methods for specific garments to achieve proper fit, quality, and style. It teaches how to match fabrics and understand

how to construct them efficiently as well as how to accurately care for specific fabrics. It helps students learn how to research and develop ideas based on the latest advancements in the textile industry. Students who complete this course are able to work with various fibers effectively to create quality garments.
Objectives:

- Match physical fabrics to the appropriate name and identify the type of construction.
- Demonstrate the process of weaving, by creating paper versions of basic weaves.
- Identify appropriate fiber and fabric properties to apply in apparel design and selling interactions.
- Identify accurate care instructions and symbols for specific fabrics.
- Research and identify a new textile technology advancement in the industry.

**Fashion Styling 2 Credits/60 Clock-Hours**

The Fashion Styling course introduces how to take body measurements, calculate proportions, and assess figure types. This course covers how to use shape relationships and elements of design to create the illusion of balanced figure types or portray a certain character, trend, or style. It covers the implementation of these methods by allowing the student to act as a freelance stylist for a personal wardrobe consultation and a corporate client ad campaign. It teaches how to apply best practices for contract development as a freelance fashion stylist in mock scenarios. Students who complete this course are able to work as a stylist to create a wardrobe for a client.
Objectives:

- Perform a successful body-measurement-skills pass off.
- Identify character, trend, and style.
- Identify figure types and body proportions using body measurements.
- Coordinate a wardrobe presentation for a mock client.
- Prepare a styling presentation for a mock corporate ad campaign.

**Professional Development 2 Credits/60 Clock-Hours**

The Professional Development course covers how to create professional resumes, write cover letters, and complete job applications specific to individual career focus. Students learn how to apply best practices of social media and technology to market their professional skills and experience in pursuit of a career. In addition, students implement effective ways to communicate in management and leadership scenarios. Reviews how to develop effective interview techniques and follow-up procedures through a mock interview. Students who complete this course are able to successfully complete the job seeking process to acquire employment in the fashion industry.
Objectives:

- Identify preferred career paths and create a social media presence for associated professional skills and experience.
- Create a professional resume and cover letter.

- Demonstrate effective interview techniques and apply appropriate follow-up procedures with potential employers.
- Showcase appropriate communication skills verbally and nonverbally through case scenarios.
- Identify appropriate levels of professional relationships between managers and co-workers.
- Demonstrate ability to conduct effective employee reviews with professionalism and sensitivity for areas of conflict.

**Promotional Event Planning 3 Credits/90 Clock-Hours**

This Promotional Event Planning course develops the necessary skills to plan, produce, and execute a promotional fashion show. It covers skills and knowledge of promotion by working on an overall theme, advertising and marketing elements, choreography, merchandise and music selection, and merchandise preparation of a fashion show. The course introduces students to how to compile trend forecasting research for the current season. This course covers how to develop project management skills by creating a team calendar to manage all important assignments and planning deadlines. Students who complete this course are able to plan and execute a promotional fashion event from the ground up.

Objectives:

- Compile trend forecasting research for the current season.
- Develop a theme that could be implemented with a specified budget.
- Create social media posts and advertising elements for a fashion show.
- Plan and produce a promotional window display for a fashion show.
- Implement project management skills while working as a team on a fashion show.

**Visual Merchandising 3 Credits/90 Clock-Hours**

The Visual Merchandising course focuses on the development of creative concepts and visual presentation of merchandise and apparel. This course covers the key principles and elements of design and explains how retailers use these principles and elements to present merchandise. Introduces how to implement principles and elements of design in retail window displays. The course covers overall brand concepts, color psychology, fixtures, atmospherics, drafting, and display techniques through hand-on experience. Students who complete this course are able to create visual presentations of merchandise and apparel for a client.

Objectives:

- Identify the principles and elements of design in advertising and retail window displays.
- Differentiate between feature and capacity fixtures used in retail operations.
- Develop create concepts and visual presentation.
- Create an effective themed visual presentation of merchandise, accessories, and props for a display and planogram layout.

- Develop an overall retail store concept that includes merchandise categories, pricing, floor layout, fixtures, and atmospherics.

**Beginning Sewing 3 Credits/90 Clock-Hours**

The Beginning Sewing course introduces basic sewing techniques, sewing equipment, and operations of a sewing machine and serger. This course covers how to apply body measurements, reading, pattern layout, and fabric selection to different garment types. Introduces how to evaluate the characteristics, performance, and care of specific textiles. This course helps students improve their skills by allowing them to create samples for a variety of sewing techniques and construct two simple garments using a commercial pattern. Students who complete this course are able to produce quality garments for clients.
Objectives:

- Identify the parts and correct operations of a basic sewing machine and serger.
- Evaluate the characteristics, performance, and care of specific textiles.
- Determine the most efficient layout for a commercial pattern.
- Demonstrate specific sewing techniques through two customized sewing practicums.
- Produce two quality garments using proper construction techniques and seam finishes for the fabric types.

**Product Development 3 Credits/90 Clock-Hours**

The Product Development course covers the process of product development from research to production and distribution. It introduces the roles of the key positions within the apparel industry and the part they play to produce a product. In this course, students conduct market research and develop ideas for a line of goods to produce. This course introduces the steps of production through material sourcing, manufacturer selection, sample creation, and distribution. The course also covers best practices for contracts and negotiations regarding product development. Students who complete this course are able to develop and implement ideas for a line of goods to purchase for a business or client.
Objectives:

- Identify the roles of the key positions in the apparel industry and steps necessary to produce a sample garment or other fashion-related item.
- Understand and implement the process of product development.
- Select appropriate companies/facilities to source raw goods and produce specific merchandise.
- Identify appropriate distribution policies and channels for a selected product.
- Outline the required steps to produce a product for the creation of a specific line of goods.

**ELECTIVES (4 Credit hours/120 Clock-hours Required)**

**Introduction to Entrepreneurship 2 Credits/60 Clock-Hours**

The Introduction to Entrepreneurship course helps students know what it takes to start a business, how to elaborate on business ideas, and how to decide whether a business idea has marketability. As students develop their ideas, they learn how to brand a business and gain a basic understanding of what it takes to run a business. Students learn how to develop and implement business strategies. They also have networking opportunities with local business owners and classmates. Students who complete this course are able to start their own business or help run and improve an existing business.

Objectives:

- Complete a competitive analysis of local businesses.
- Create a business strategy.
- Project business expenses and income.
- Follow the brainstorming process of creating a business name and brand strategy.
- Determine the target market for a business.
- Create a sales strategy for a business.

**Digital Illustration 3 Credits/90 Clock-Hours**

The Digital Illustration course introduces the basics of navigating and creating in an industry standard, 3D fashion design software. Using software, students create and/or modify 2D pattern pieces, sew pattern pieces together, and simulate those garments in 3D. This course covers how to expand design capabilities, produce faster and more accurate apparel renderings, and obtain skills that industry leaders are actively seeking. Students who complete this course are able to use industry standard design software efficiently and effectively.

Objectives:

- Demonstrate the basics of navigating and creating industry standard software.
- Demonstrate ability to operate design software.
- Modify and/or create functioning patterns and 3D apparel renderings.
- Develop and enhance design skills.

**Editorial Production and Design 1 Credits/30 Clock-Hours**

The Editorial Production and Design course introduces the basic types of editorials and key design steps used to create aesthetically pleasing and effective content for an article/editorial feature in a magazine or website. It covers how to create a mock editorial for a high fashion magazine or website. This course implements all the elements needed to create an effective editorial using appropriate copy, graphics, and layout standards. Students who complete this course are able to research a current trend in the fashion industry and develop a theme to use a feature.

Objectives:

- Identify design elements of effective and appealing layouts.

- Demonstrate the ability to research trends
- Develop a theme for an editorial feature.
- Select a specific type of editorial and create an effective editorial feature for a high fashion magazine or website.
- Present a clear, informed story using professional and creative copy alongside strong visual imagery.
- Develop skills to create effective editorial content.

**Advanced Sewing** **3 Credits/90 Clock-Hours**

The Advanced Sewing course provides an extension of sewing skills gained in Beginning Sewing by focusing on clothing construction, fit, and design consideration at the advanced level. It covers how to distinguish different types of fiber and fabric characteristics and their uses in the apparel industry. It teaches students how to produce and improve pattern alterations. The focus of the course will be aimed toward, but not limited to, outdoor gear style. Students who complete this course are able to construct outdoor gear and other advanced garments.

Objectives:

- Distinguish different types of fabric and fiber characteristics used in the sports and outdoor apparel industry.
- Identify the steps to produce a pattern
- Demonstrate ability to produce and improve pattern alterations for an accurate fit.
- Demonstrate correct sewing construction techniques at the intermediate level to complete three functional garments.
- Demonstrate clothing construction, fit, and design.

**Historic Costume** **2 Credits/60 Clock-Hours**

The Historical Costume course covers the history of dress from the ancient world to the 19th century. It covers the costume of each period within its historical, cultural, and economic context. The course introduces a basic vocabulary of the styles worn during each of the historical periods. It teaches students how to identify historical clothing and accessories along with their social and historical context. Students who complete this course are able to design and identify clothing and accessories from historical periods for clients.

Objectives:

- Develop a basic vocabulary of the styles worn during each of the historical periods.
- Identify the cultural and economic context for each style.
- Identify silhouettes, details, fibers, and material used for each period.
- Identify correct styles of clothing and accessories that were adopted by members of social groups that were socially appropriate for specific times and situations.

- Design costumes with proper historical design elements for a specific theater or film character.

**Special Applications FASH 1-4 Credits/ 30 -120 Clock-Hours**

The Special Applications course provides students with unique or advanced skill development identified as an immediate need in the current occupational industry. This course allows for deliberate customization dependent on client need, student skills, and the ability to perform both qualitative and quantitative assessments while the student progress through the course. Specific course competencies will be documented and when possible, a descriptive title will be provided for the student transcript. Course length is not to exceed 180 hours.

**Fashion Merchandising Externship 2 Credits/90 Clock-Hours**

The Fashion Merchandising Externship course focuses on the practical application of classroom skills through real workplace situations. It develops real-world work experience using decision-making, critical thinking, and problem-solving skills. The course assigns real client business projects to the student by cooperative businesses and students will receive objective input on their performance. The course allows the employer to customize student learning objectives by addressing the individual needs of the organization and career interests of each student. Students who complete this course are able to apply fashion and design skills in a real-world setting.

Objectives:

- Create personalized objectives (with on-site representative/supervisor) to be accomplished during the internship.
- Demonstrate competency in all skill areas being evaluated by on-site representative/supervisor.
- Maintain proper attendance and communication for the duration of the internship.
- Demonstrate ability to receive constructive criticism and improvement suggestions.
- Utilize soft and technical skills to successfully complete set objectives by the end of the internship.

**Graphic Design Applications I 3 Credits/90 Clock-Hours**

The Graphic Design Applications I course will develop fundamental techniques and principles for editing images in various software. Create digital photo images from scanning, a digital camera, or video capture. Demonstrate competency in using a computer system for editing digital images. This course introduces how to operate current industry image editing software. This course covers how to analyze design using basic design principles and theory taught in the course. Students who complete this course are able to perform basic functions in a graphic design software.

Objectives:

- Identify elements of image editing.
- Use a computer system for editing digital images.
- Operate current industry image editing software.

- Demonstrate an understanding of basic design principles and theory.
- Demonstrate competency in industry image editing software.

| **Interior Design** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 39 credits / 1200 clock hours)* | | | |
| **Core (39 Credits/1200 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| IDES 1010 | Design Theory | 4 | 120 |
| IDES 1025 | Color Theory | 1 | 30 |
| IDES 1035 | Rapid Sketching | 2 | 60 |
| IDES 1045 | Materials & Sources | 4 | 120 |
| IDES 1050 | Textiles & Pattern Development | 1 | 30 |
| IDES 1060 | Building Codes | 1 | 30 |
| IDES 1070 | Space Planning & AutoCAD | 5 | 150 |
| IDES 1080 | SketchUp Pro | 3 | 90 |
| IDES 1090 | REVIT Basics | 4 | 120 |
| IDES 1105 | Architectural Detailing | 5 | 150 |
| IDES 1110 | Senior Project | 5 | 150 |
| IDES 1120 | Product Development & Portfolio | 1 | 30 |
| IDES 1130 | Business Practices | 1 | 30 |
| IDES 2998 | Interior Design Externship | 2 | 90 |
| | **TOTALS** | **39** | **1200** |
| **Non-Required Elective (0 Credits/0 Clock-Hours Required)** | | **Credits** | **Clock-Hours** |
| ACCT 2110 | Introduction to Entrepreneurship | 2 | 60 |
| IDES 2999 | Client Projects Externship | 2 | 90 |
| IDES 1160 | Field Trips | 1 | 30 |

**Interior Design**

FY2023 / 39 Credits (1200 Clock-Hours)

**PROGRAM DESCRIPTION**

The Interior Design program prepares graduates for careers in interior design and cultivates career skills with technical software, drafting, and digital drawings. Students learn to use design rules and apply the design process using the most relevant software in the interior design industry.

Students design and draft residential and commercial projects to create a full set of working drawings. Design elements and technical drafting are taught using current building codes. This ensures students have a strong design aesthetic and understanding of design construction and architecture. Students are

mentored one-on-one by industry professionals. Upon completion of this competency-based certificate, students are prepared to begin their career in the interior design industry.

Objectives:

- Demonstrate competency in creative and technical skills by taking a client's inspiration to a complete design concept.
- Prepare and present client projects demonstrating professionalism in verbal and visual communication and personal appearance.
- Utilize 3D consulting software for client presentations to introduce new product designs as well as construction designs.
- Demonstrate confidence in presenting design concepts to others for feedback and critique.
- Demonstrate the ability to read, understand, and develop effective construction documents.
- Develop professional business, leadership, and communication skills by planning, organizing, and participating with design teams for client projects.

**COURSE DESCRIPTIONS**

**Design Theory** **4 Credits/120 Clock-Hours**

The Design Theory course teaches students the design process and elements of design theory to create original designs. Students study current and relevant design styles, furniture styles, and roof shapes. Covers how to use industry software such as Adobe Photoshop, Illustrator, InDesign, and Homestyler to apply design theory and technical software skills to 3D design renderings and in personal branding and marketing of student portfolios. Students develop strong presentation skills by providing visual and verbal communication of their final design concepts while justifying their design decisions. Students who complete this course are prepared to apply design theory to practice.

Objectives:

- Apply technical skills such as scale, proportion, light, shadows, and perspective realism in basic 3D perspective room renderings.
- Apply the basic principles of graphic design and branding.
- Demonstrate and further enhance creativity by completing the steps of the design process and applying techniques learned from the course.
- Identify and apply key features of architecture, roof styles, and design styles through research and application of these features in individual designs.
- Demonstrate skills in professional communication by presenting projects and justifying design decisions.

**Color Theory** **1 Credits/30 Clock-Hours**

The Color Theory course helps students explore the basics of color theory, beginning with the color wheel and the role of psychology in the human response to color. Students learn to identify tints, tones, and

shades of colors through color selections and applications in designs and the subtle messaging that each of these elements can convey to a design element. Students assess design aesthetics for effectiveness and enhancement or modification. Students apply appropriate color harmonies and combinations to enhance or subdue a design. Students who complete this course are able to analyze and apply color theory to projects.

Objectives:

- Identify tints, tones, and shades of color and their effects.
- Use various color combinations to enhance and subdue designs.
- Create unique color harmonies and trend colors using color inspirations.
- Develop and apply color schemes to designs.
- Use color psychology to appropriately select and apply color to design projects.

**Rapid Sketching 2 Credits/60 Clock-Hours**

The Rapid Sketching course teaches students how to quickly sketch realistic one- and two-point perspectives in the correct scale to communicate design concepts and design vision to clients and team members. Since the ability to quickly convey ideas is critical to success in the industry, students practice quick, timed sketching and rapid rendering techniques using black sketching pens and markers. Students learn to sketch architectural features by applying the principles of line, texture, pattern, and shadow to prepare them for working with clients and firms. Students who complete this course are able to quickly sketch ideas for clients and employers.

Objectives:

- Sketch one- and two-point perspective drawings quickly with architectural details, furniture, and accents.
- Use correct scale and proportion to sketched elements using a black pen and marker to show quick sketching techniques, such as shadows, depth, and texture.
- Complete timed rapid sketches in 15-minute and 3-minute practices.
- Apply appropriate design elements and principles in hand-rendered interior design sketches.
- Present drawings in a professional manner.

**Materials & Sources 4 Credits/120 Clock-Hours**

The Materials & Sources course helps students research materials and products used for residential and commercial spaces. Students learn each material's correct function and purpose by compiling industry standard specification sheets and researching requirements for installation and maintenance. Students also learn how to source materials available for the residential and commercial markets, so that they can gain a greater understanding of labor costs and trending products. Covers how to calculate product costs using specific formulas. Students who complete this course are able to acquire materials for clients and employers.

Objectives:

- Research and identify the best materials and sources for finish materials and products in residential and commercial interior/exterior projects.
- Identify new products, techniques, finishes, and innovations in the design market.
- Evaluate price and quality differences between interior and exterior finishes.
- Determine how fabrication, installation, and other specifications impact material selection.
- Apply correct measurement and calculation formulas to specific products for accurate quantities.

**Textiles & Pattern Development 1 Credits/30 Clock-Hours**

The Textiles & Pattern Development course helps students learn the history of textiles and the influences cultures had on the construction and application of textiles in interior design. Students also identify the role of fibers and weaves in fabric construction and the use of various types of fabrics and patterns best used in projects. The students apply product development to design a textile pattern, manufacture their own textile sample, render their textile design in a way that best showcases their product line, and publicly present their vision and findings. Students who complete this course can assist employers and clients with textile selection and development.

Objectives:

- Identify the correct construction and application of textiles used for residential and commercial designs.
- Select different types of weaves and construction of fabrics to be used for the correct applications for furniture, window coverings, upholstery, accent pillows, and bedding.
- Create a textile pattern that can be developed into a product line and render the product into an interior design of choice.
- Present the project in a professional manner publicly.

**Building Codes 1 Credits/30 Clock-Hours**

The Building Codes course helps students learn the process of finish material estimating and ordering procedures for installation. Students become proficient in estimating and ordering finishes, including flooring, window and wall coverings, draperies, paint, and upholstery. They also gain an understanding of building codes as they relate to finish materials and project installation. Students demonstrate mastery of calculating estimates and identifying building code violations through mock-client scenarios. Students who complete this course understand how to apply building codes, which is an essential skill as a designer.

Objectives:

- Calculate material estimates for a variety of finishes based on mock-client scenarios.
- Apply appropriate building codes while placing finish materials on floor plans.
- Analyze and effectively plan for finish materials within a client's budget.

- Identify areas of concern on floor plans.
- Use building codes to correct building violations.

**Space Planning & AutoCAD 5 Credits/150 Clock-Hours**

The Space Planning & AutoCAD course helps students learn space planning rules to organize unique and creative spaces and design layouts of interior residential and commercial projects. Building codes, ADA accessibility requirements, environmental concerns, and occupancy standards are used to organize residential and commercial interior spaces and ensure those spaces are both accessible and safe to use. Students use problem-solving, sketching, and schematic design development to address the needs of clients to effectively organize and design new construction as well as to renovate projects. Students who complete this course are prepared to use AutoCAD for employers.

Objectives:

- Use current building codes and ADA requirements to organize residential interior spaces based on the client specifications.
- Use current building codes and ADA requirements to organize commercial interior spaces based on the client specifications.
- Organize furniture plans that meet code requirements for clear, easy access and function.
- Apply problem-solving skills during the design phase for resolving problematic floor plans and/or existing spaces.
- Use AutoCAD to draft basic and advanced residential and commercial floor plans with project documents and schedules.

**SketchUp Pro 3 Credits/90 Clock-Hours**

The SketchUp Pro course teaches students to use SketchUp Pro to import AutoCAD files and create 3D BIM (Building Information Modeling) models of existing floor plans, create new floor plans, and learn to use the software's main modeling features for custom architecture and furniture designs. Students learn to navigate the SketchUp Pro warehouse for products and materials used to develop 3D renderings. They use the 3D walk-through presentation features used for client meetings and present their efforts publicly in a mock-client scenario. Students who complete this course are prepared to use SketchUp Pro for employers.

Objectives:

- Import design files from other software programs to be edited or added to using SketchUp Pro software.
- Apply knowledge of architecture and design elements to new build designs and create new floor plans.
- Create custom architecture and furniture using the SketchUp Pro BIM modeling software.
- Apply product materials to final renderings.

- Navigate multiple presentation modes for client presentations.

**REVIT Basics** **4 Credits/120 Clock-Hours**

The REVIT Basics course helps students learn how to use Autodesk 3D design software, Revit, to draft a large commercial office design. Basic Revit software is instructed so that students can apply advanced space planning concepts and commercial building codes to their projects. Students learn how to apply Revit materials and create schedules for the project. Students learn to render their projects in Revit for professional, visual presentations. Students who complete this course are prepared for more advanced Revit training introduced in a later course.

Objectives:

- Use Revit 3D software to design and draft floor plans.
- Apply current building codes to the project.
- Apply materials and products effectively to the project
- Create schedules and design drawings for a set of professional construction documents.
- Present their project in a professional manner publicly.

**Architectural Detailing** **5 Credits/150 Clock-Hours**

The Architectural Detailing course helps students use Revit to draft architectural detailed drawings and build mechanical, electrical, plumbing (HVAC, Electrical, and Plumbing) systems for commercial projects. They draft working documents to include footings/foundations, sills, floors, walls, ceilings, windows, doors, roofs, electrical, plumbing, and climate control HVAC systems with their appropriate architectural symbols. Students draft detailed drawings and elevations for architectural features such as stairs, fireplaces, and custom cabinets. Students who complete this course are prepared to draw detailed architectural drawings, giving them valuable industry skills.

Objectives:

- Design and draft working construction documents based on industry standards using 3D Revit software, and current building codes.
- Label and specify all details and dimensions needed for furniture and other systems located in each space of a floor plan.
- Apply correct architectural symbols and dimensions to construction systems, detail drawings, interior and exterior elevation drawings, and working construction documents.
- Read, understand, and communicate the architectural details, systems, and codes on working drawings for residential designs.
- Present projects in a professional manner publicly.

**Senior Project** **5 Credits/150 Clock-Hours**

The Senior Project course allows students to demonstrate mastery of all skills developed throughout the program. The senior project includes a large residential project using Revit. This final project must incorporate all the elements and principles of design, color theory, rapid sketching, materials and sources, textiles, building codes, space planning, architectural detailing, and product development. This final project determines whether the student has learned the necessary skills and techniques required by industry leaders to be an interior designer. Students who complete this course show that they have all the basic skills to be an interior designer.

Objectives:

- Provide research and inspiration for design, development, and refinement using the design process.
- Communicate the design process from rapid sketches and preliminary drawings to technical drawings and 3D renderings.
- Develop floor plans, elevations, construction plans, and final design renderings based on current code restrictions and applications in detailed construction plans.
- Manage budgets through calculations of square footages and material cost estimates.
- Source samples of products and provide construction and installation schedules and specifications.
- Use Revit to create professional design plans and documents.
- Create a professional presentation of the design process and final product for a class critique with project branding.
- Communicate the design concepts and elements of final design projects professionally, visually, and verbally.

**Product Development & Portfolio** **1 Credits/30 Clock-Hours**

The Product Development & Portfolio course helps students use Adobe InDesign to compile their best product development designs and organize their approved portfolio assignments in a physical portfolio and on a web E-portfolio platform. Advanced graphic design skills are used to design both the physical portfolio and E-portfolio. Students use professional, personal branding, and marketing skills to promote both portfolios and to organize bodies of work. Students who complete this course have a professional grade portfolio to show potential employers or clients.

Objectives:

- Apply graphic design skills and training to market and promote product designs and design concepts.
- Develop professional portfolios and magazine spreads using Adobe lnDesign.
- Build an easy-to-use, online web E-portfolio with an E-commerce option that can be added to and/or edited.

- Create a professional resume and promote it on social media platforms for future employment opportunities.
- Communicate the design concepts and elements of the portfolio and resume professionally, visually, and verbally.

**Business Practices 1 Credits/30 Clock-Hours**

The Business Practices course helps students learn the business aspects of interior design. Students learn how to apply professional best practices in social media management, interview and employment strategies, freelance work, collaboration with vendors, building and leading a design team, ethical business procedures, industry safety, client relationships, and personal branding. Students practice effective interviewing techniques in mock interviews as they shadow a designer or specific business, create reports on vendors, and develop a business plan. Students create professional business documents, such as a list of services, contracts, and invoices. Students who complete this course are prepared to start their own business.

Objectives:

- Perform proper interviewing techniques.
- Identify best practices in social media usage.
- Identify the different ways of building a business or clientele.
- Identify key ethical and industry-standard business practices.
- Create a personal or business brand.
- Create a vendor/trades list and project management schedules.

**Interior Design Externship 2 Credits/90 Clock-Hours**

The Interior Design Externship course allows students to research potential internship opportunities based on their preference for employment and arrange a minimum of 90 hours to work as an extern. This hands-on training is an opportunity for students to secure a position or future employment at a workplace of their choice. The department head must approve all externships prior to the students arranging the externship. Students check in with an instructor each week of their externship to ensure that the objectives are met and to allow for any mentoring. Students who complete the externship have gotten real-world experience and show employers what they are capable of.

Objectives:

- Contact potential employers to promote themselves as future employees.
- Provide professional portfolios and resumes for internships and job interviews.
- Demonstrate competency in all industry design software, attention to detail, problem-solving and time management.
- Apply design training, creative innovation, and technical design concepts to projects and/or assist on projects.

- Apply all required employment skills to each day of the externship.

**NON-REQUIRED ELECTIVES (0 Credit hours/0 Clock-hours Required)**

**Introduction to Entrepreneurship 2 Credits/60 Clock-Hours**

The Introduction to Entrepreneurship course helps students know what it takes to start a business, how to elaborate on business ideas, and how to decide whether a business idea has marketability. As students develop their ideas, they learn how to brand a business and gain a basic understanding of what it takes to run a business. Students learn how to develop and implement business strategies. They also have networking opportunities with local business owners and classmates. Students who complete this course are able to start their own business or help run and improve an existing business.

Objectives:

- Complete a competitive analysis of local businesses.
- Create a business strategy.
- Project business expenses and income.
- Follow the brainstorming process of creating a business name and brand strategy.
- Determine the target market for a business.
- Create a sales strategy for a business.

**Client Projects Externship 2 Credits/90 Clock-Hours**

The Client Projects Externship course allows students who have demonstrated sufficient competency the opportunity to work on actual client design projects. Students apply all prior training and skills to develop the design concept, manage the design project, conduct client meetings, and presentations, source products, coordinate with vendors, collaborate with design team members, participate in follow-up meetings, and address all client concerns in a professional, ethical manner. Students who complete this course are able to show employers that they are able to work with actual clients on their design projects.

Objectives:

- Demonstrate ability to take the lead on a design project.
- Identify challenges and solutions in scheduling, budgeting, and effectively managing time.
- Create design concepts and client presentations using industry-standard software.
- Demonstrate responsibility, professionalism, and respect while working with industry professionals.
- Organize and manage the project details, install, and/or stage a completed design project.
- Demonstrate customer service skills with follow-up meetings and daily and weekly correspondence.

**Field Trips** **1 Credits/30 Clock-Hours**

The Field Trips course allows students who have a satisfactory progress ratio, positive attendance record, and have shown excellence in the quality of their work to qualify to attend department organized field trips. Field trips include visiting national and local conferences and firms. Students have the opportunity to connect with industry leaders and vendors. In preparation for making these connections, students prepare a professional portfolio and resume to share with potential employers or externship providers. Students who complete this course make valuable contacts and connections in the design field.

Objectives:

- Apply real-life experience to their portfolios and resumes.
- Make contacts and connections with industry leaders for potential future employment.
- Identify current trends in design.
- Organize externship opportunities.
- Create vendor lists for trades accounts and designer discounts.

| **Meat Services** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 29 credits / 900 clock hours* | | | |
| **Core (27 Credits/840 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| MEAT 1010 | Introduction to Meat Services | 2 | 60 |
| MEAT 1020 | Safety | 3 | 90 |
| MEAT 1030 | Equipment | 3 | 90 |
| MEAT 1040 | Beef Cutting I | 4 | 120 |
| MEAT 1050 | Beef Cutting II | 4 | 120 |
| MEAT 1060 | Pork & Lamb Cutting | 5 | 150 |
| MEAT 1070 | Value Added Products | 4 | 120 |
| MEAT 2998 | Packaging & Presentation Externship | 2 | 90 |
| | **TOTALS** | **27** | **840** |
| **Elective (2 Credits/60 Clock-Hours Required)** | | **Credits** | **Clock-Hours** |
| ACCT 2110 | Introduction to Entrepreneurship | 2 | 60 |
| MEAT 1300 | Retail | 2 | 60 |
| MEAT 2999 | Meat Services Externship | 2 | 90 |

**Meat Services**

FY2023 / 29 Credits (900 Clock-Hours)

**PROGRAM DESCRIPTION**

The Meat Services program provides students the opportunity to obtain a certificate in the meat services industry. Highly skilled, industry-trained instructors guide students through hands-on and individualized

instruction to meet the occupational goals of each student. Topics include knife care, meat inspection, sanitation, equipment, wholesale and retail operations, custom harvesting, custom cutting, pricing, cured/smoked meats, ground meats, beef, pork, and poultry. Students will also learn basic cooking skills needed to prepare and serve meat products.

Objectives:

- Operate, clean, and maintain knives and meat processing equipment safely.
- Demonstrate an understanding of harvesting principles for beef, pork, and lamb.
- Demonstrate how to grade, breakdown, produce cuts (retail and custom), package, and sell beef products.
- Demonstrate how to grade, breakdown, produce cuts (retail and custom), package, and sell pork products.
- Demonstrate how to grade, breakdown, produce cuts (retail and custom), package, and sell lamb products.
- Demonstrate how to trim and package poultry products for retail sale.

**COURSE DESCRIPTIONS**

**Introduction to Meat Services 2 Credits/60 Clock-Hours**

The Introduction to Meat Services course provides career and program orientation for those pursuing a retail meat cutting career. This course introduces basic sanitation principles, which are mandatory before students can perform lab work. The course provides an orientation to the floor, shop, kitchen, and other program workspaces. It showcases common retail and wholesale career paths for meat cutters. Students who complete this course are able to perform basic sanitation and understand opportunities in the meat industry.

Objectives:

- Demonstrate a professional level of hygiene.
- Demonstrate industry sanitation techniques.
- Identify elements of the program floor, shop, and kitchen.
- Identify potential retail career opportunities.
- Identify potential wholesale career opportunities.

**Safety 3 Credits/90 Clock-Hours**

The Safety course introduces safety regulations for those pursuing a career in the meat industry. It provides basic workplace safety and meat industry safety standards. This course also covers state food and health safety requirements and food handler's permit requirements. Introduces basic lifting, allergen, and hazard analysis critical control point (HACCP) safety, as well as basic knife care and safety. Students who complete this course are able to safely work in a shop or lab setting.

Objectives:

- Identify allergens and hazards.
- Demonstrate safe and proper care for knives
- Obtain a food handler's permit.
- Demonstrate safety procedures for handling and packaging meat.
- Demonstrate basic food and shop safety techniques.

**Equipment** **3 Credits/90 Clock-Hours**

The Equipment course introduces the different types of equipment in the meat industry, how to safely use each of them, and how to care for them. This course also covers proper equipment use, maintenance, assembly, and disassembly. This course introduces equipment such as the grinder, tenderizer, and the smoker and gives students an opportunity to work with these tools. Students who complete this course are able to work with and provide maintenance to various meat equipment.

Objectives:

- Identify uses of equipment commonly used by meat cutters.
- Demonstrate the safe and proper use of the grinder.
- Demonstrate the safe and proper use of the tenderizer.
- Demonstrate the safe and proper use of the smoker.
- Properly care for, clean, and store equipment.

**Beef Cutting I** **4 Credits/120 Clock-Hours**

The Beef Cutting I course introduces the basic principles of beef cutting and provides basic skills necessary to work in the meat cutting industry. Provides an opportunity for students to work hands-on in the lab. It covers beef harvesting and identification of various beef cuts and how to break carcasses into wholesale parts. This course also covers basic beef retail and sanitation skills. Students who complete this course are able to demonstrate competency in basic beef cutting techniques.

Objectives:

- Identify the various elements of beef wholesale and custom meat cutting.
- Identify the stages and elements of the inspection process.
- Demonstrate the ability to correctly identify beef cuts.
- Demonstrate competencies harvesting beef.
- Demonstrate ability to prepare ground meats for retail.

**Beef Cutting II** **4 Credits/120 Clock-Hours**

The Beef Cutting II course focuses on and reinforces improving basic skills and principles of beef cutting from the Beef Cutting I course. It provides an opportunity for students to work hands-on in the lab as they

work through the process of custom cutting and learning the best practices of cooking each type of beef cut. Students are able to pass off proficiency in harvesting skills by demonstrating their techniques. Students who complete this course are able to demonstrate competency in advanced beef cutting techniques.

Objectives:

- Demonstrate competencies in following custom instructions.
- Pass off proficiency in harvesting skills.
- Identify how to cook each type of cut of beef.
- Demonstrate competency in preparing retail, wholesale, and custom beef cuts.
- Demonstrate competencies required for inspection, sanitation, grading, and yielding.

**Pork & Lamb Cutting 5 Credits/150 Clock-Hours**

The Pork & Lamb Cutting course introduces the basic principles of pork and lamb cutting and provides basic skills necessary to work in retail meat cutting. Students gain realistic experiences working with pork and lamb in a laboratory setting. This course covers breaking carcasses into wholesale parts, including primal and subprimal cuts. It introduces best practices of cooking pork and lamb and how to demonstrate competency in preparing to assist customers in a shop. Students who complete this course are able to demonstrate competency in basic pork and lamb preparation.

Objectives:

- Pass off proficiency in harvesting skills.
- Identify pork wholesale and custom meat cutting.
- Demonstrate competency in preparing retail, wholesale, and custom pork and lamb cuts.
- Identify lamb wholesale and custom meat cutting.
- Demonstrate the ability to correctly identify pork and lamb cuts.

**Value Added Products 4 Credits/120 Clock-Hours**

The Value-Added Products course focuses on and reinforces improving basic skills and principles of meat cutting and allows students to work with other meats and cuts. With such a wide variety of meats available, this course teaches students how to apply what they have learned in the other courses and allows them to practice those skills with regards to miscellaneous cuts. Covers working with seasonal and custom cuts. Students who complete this course are able to work with miscellaneous and seasonal cuts.

Objectives:

- Demonstrate competency in utilizing offal.
- Produce marinated products, jerky, various sausages, and smoked products.
- Demonstrate competency in evaluating yield.
- Calculate prices of value-added products correctly.
- Demonstrate the ability to correctly identify cuts.

**Packaging & Presentation Externship 2 Credits/90 Clock-Hours**

The Packaging & Presentation Externship course introduces the basic principles of meat packaging and presentation. It covers how to independently prepare retail cuts of meat from carcass animals or boxed products and how to properly label and price the products. This course teaches students retail procedures including packaging, pricing, and displaying products in a retail environment. Students who complete this course are able to prepare retail cuts of meat for a shop setting.

Objectives:

- Identify elements of packaging and displaying meat products.
- Demonstrate skills in packaging beef, pork, lamb, and poultry.
- Demonstrate competency in displaying beef, pork, lamb, and poultry.
- Identify concepts in meat pricing.
- Fulfill orders and complete custom cut requests.

**ELECTIVES (2 Credit hours/60 Clock-hours Required)**

**Introduction to Entrepreneurship 2 Credits/60 Clock-Hours**

The Introduction to Entrepreneurship course helps students know what it takes to start a business, how to elaborate on business ideas, and how to decide whether a business idea has marketability. As students develop their ideas, they learn how to brand a business and gain a basic understanding of what it takes to run a business. Students learn how to develop and implement business strategies. They also have networking opportunities with local business owners and classmates. Students who complete this course are able to start their own business or help run and improve an existing business.

Objectives:

- Complete a competitive analysis of local businesses.
- Create a business strategy.
- Project business expenses and income.
- Follow the brainstorming process of creating a business name and brand strategy.
- Determine the target market for a business.
- Create a sales strategy for a business.

**Retail 2 Credits/60 Clock-Hours**

The Retail course introduces the basic principles of meat retail. It covers essential knowledge of retail procedures including packaging, pricing, displaying products, and customer service in a retail environment. Develops and strengthens skills in the Packaging & Presentation course. Prepares students for work with customers in a shop, learning proper customer service skills, such as greeting customers, answering customer questions, and ringing up the customers' orders on the cash register. Students who complete this course are able to work with customers in a retail environment.

Objectives:

- Demonstrate proper meat packaging and display techniques.
- Demonstrate how to properly rotate stock to ensure fresh product.
- Identify pull dates and how to handle the product after it's been pulled.
- Demonstrate proper customer service skills.
- Demonstrate proper sanitation of display cases.

**Meat Services Externship** **2 Credits/90 Clock-Hours**

The Meat Services Externship course develops the practical application of classroom skills through real workplace situations. Implements real-world work experience using decision-making, critical thinking, and problem-solving skills. Real client business projects will be assigned to the student by cooperative businesses and students will receive objective input on their performance. Customized student learning objectives will be developed addressing the individual needs of the organization and career interests of each student. Students who complete this course are able to apply skills in a real-world setting.

Objectives:

- Create personalized objectives (with supervisor) to be accomplished during the internship.
- Demonstrate competency in all skill areas being evaluated by a supervisor.
- Maintain proper attendance and communication for the duration of the internship.
- Demonstrate ability to receive constructive criticism and improvement suggestions.
- Demonstrate soft skills and technical skills to successfully complete set objectives by the end of the internship.

| **Home Health Aide** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 10/300* | | | |
| **Core (10 Credits/300 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| HOHA 1110 | Nurse Assistant & Home Health Aide | 5 | 150 |
| HOHA 1510 | Nurse Assistant & Home Health Aide Skill Lab | 4 | 120 |
| HOHA 1900 | Nurse Assistant Certification Evaluation | 1 | 30 |

**Home Health Aide**

FY2023 / 10 Credits (300 Clock-Hours)

**PROGRAM DESCRIPTION**

The home health aide is an important member of the health care team directly involved with patient care of physically or mentally challenged individuals who need help with personal care, activities of daily living, and simple household chores. The Home Health Aide program prepares students to seek employment in residential care facilities, hospice settings, and clients' homes. During the program, students will develop strong communication techniques and learn the basic nursing skills necessary to become certified as a nurse assistant in the State of Utah. Students will demonstrate proficiency in providing basic personal cares including bathing, showering, grooming, and other personal hygiene tasks, as well as develop skills for basic household tasks such as cooking and meal preparation, light cleaning, and doing laundry. Students will develop an understanding of basic household safety and complete a ServSafe course on food safety. Upon successful completion of the program, students will be recommended to take the UNAR State Certification exam to become a certified nurse assistant in the State of Utah and will receive a food handlers' permit from the Utah Department of Health.

Objectives:

The mission of this program is to enable the home health aide to demonstrate the knowledge, skills and professionalism required by employers and residents, protect certified nurse assistants' rights to practice, and promote effective, efficient healthcare delivery in a variety of healthcare settings. In this course you will participate in hands-on skills practice, take written assessments, and review textbook and vocabulary assignments. Upon completion of this program, students will have received specialized training to be a home health aide. In the Home Health Aide program, students will be enrolled in 300 hours of training, 115 of which is course-specific certified nurse assistant training (90 in classroom instruction and 25 in clinical practice). Throughout this training, students will have the opportunity to:

- Apply basic nursing skills necessary to gain employment in long-term care facilities, home health, hospice, and acute care settings
- Develop and enhance communication and interpersonal skills necessary to function as a caregiver and member of an interdisciplinary healthcare team
- Perform tasks that meet the psychological, social, physical, and spriritual needs of those they are caring for
- Demonstrate compentency in basic nursing skills in preparation for completion of UNAR state certification testing

**COURSE DESCRIPTIONS**

**Nurse Assistant & Home Health Aide 5 Credits/150 Clock-Hours**

Nurse Assistant examines the holistic approach to safely caring for patients in a variety of settings While in this course, you will analyze how healthcare systems operate and how to function efficiently within a facility. You will also practice how to work on a healthcare team to meet the patient needs. After

completing this course and passing a state certification examination, you will play an essential role on a healthcare team by observing, reporting, and performing skills studied within this course.
Objectives:

- Explore how to safely care for patients and residents in a variety of healthcare settings
- Recognize the skills needed to pass the State of Utah Certified Nurse Assistant (C.N.A.) examination administered by UNAR
- Identify the skills and knowledge necessary to be an essential part of the healthcare team and meet the needs of patients and residents

**Nurse Assistant and Home Health Skill Lab 4 Credits/120 Clock-Hours**

Nurse Assistant and Home Health Aide Skill Lab examines the holistic approach to safely caring for patients in a variety of settings While in this course, you will demonstrate and practice the skills necessary to provide patient care in a variety of healthcare settings including ling-term care, home care, and hospice. You will also practice how to work on a healthcare team to meet the patient needs. After completing this course and passing a state certification examination, you will play an essential role on a healthcare team by observing, reporting, and performing skills studied within this course.
Objectives:

- Demonstrate how to safely care for patients and residents in a variety of healthcare settings
- Perform the skills needed to pass the State of Utah Certified Nurse Assistant (C.N.A.) examination administered by UNAR
- Apply the skills and knowledge necessary to be an essential part of the healthcare team and meet the needs of patients and residents

**Nurse Assistant Certification Evaluation 1 Credit/30 Clock-Hours**

The Nurse Assistant Certification Evaluation requires students to develop their hands-on skills before moving forward to the Utah Nurse Assisting Registry (UNAR) certification. This final evaluation will help prepare students for the skills that may be evaluated under UNAR guidelines. This preparation will include evaluation on hands-on skills associated with vital signs, beginning and ending procedures, communication, hand-washing, basic safety, moving and positioning, restorative care, hygiene and grooming, nutrition, elimination, infection prevention, and end of life care.
Objectives:

- Categorize the structure of the healthcare system and the nursing assistant's role in the healthcare team.
- Develop an understanding of rehabilitation and restorative care and demonstrate competency with common assistive devices and equipment.
- Demonstrate professionalism, including an understanding of HIPAA and the nursing assistant's role in protecting privacy and confidential information.

- Employ communication skills necessary to function as a caregiver that are culturally sensitive.
- Identify personal and environmental infection control measures and minimize potential hazards that may occur in any care settings.
- Demonstrate how a Certified Nursing Assistant can make a patient/resident's environment comfortable, safe, and clean.
- Describe basic nutrition, intake and output, and diet necessities or food preferences.
- Explain the significance of OSHA, the Omnibus Budget Reconciliation Act (OBRA), and the role of the Utah Nursing Assistant Registry (UNAR).
- Demonstrate the skills needed to pass the State of Utah Certified Nurse Assistant (C.N.A.) examination administered by UNAR

| **Biotechnology** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 28/900* | | | |
| **Core (28 Credits/900 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| PREF XXXX | Fundamentals of Biotechnology | 3 | 90 |
| PREF XXXX | Aseptic Technique | 1 | 30 |
| PREF XXXX | Chemical Instrumentation and Laboratory Techniques | 3 | 90 |
| PREF XXXX | Data Analysis | 3 | 90 |
| PREF XXXX | Quality Control and Manufacturing Practices | 3 | 90 |
| PREF XXXX | DNA Manipulation and Analysis | 3 | 90 |
| PREF XXXX | Protein Purification and Analysis | 3 | 90 |
| PREF XXXX | Cell Culture Techniques | 2 | 60 |
| PREF XXXX | Advanced Nucleic Acid Laboratory | 3 | 90 |
| PREF XXXX | Externship | 4 | 180 |

## Biotechnology

FY2023 / 28 Credits (900 Clock-Hours)

### PROGRAM DESCRIPTION

The Biotechnology Certificate prepares students to enter into the ever-expanding fields of biotechnology. The possibilities are vast for a career in this area and include genomic mapping and research, pharmaceutical or nutraceutical development, biological research and development, and many of the other fields under this discipline. This program will give students the background to continue on to lab technician work or articulate to another institution to continue their education.

Objectives:

- Fundamentals in Biology
- Laboratory & manufacturing practices
- Laboratory Practice
- Explore and analyze DNA

### COURSE DESCRIPTIONS

**Fundamentals of Biotechnology 3 Credits/90 Clock-Hours**

An introductory course to the biotechnology certificate. Students will be introduced to the many fields and applications of biotechnology. Biology and Chemistry fundamentals will be reviewed along with an overview of the central dogma of biology. Other biotech topics include recombinant DNA, proteins, bioremediation, and bioethics.

Objectives:

- Introduction to Biotechnology
- Biology Fundamentals
- Chemistry Fundamentals
- Introduction to Genes and Genomes
- Recombinant DNA
- Proteins
- Plant Biotechnology
- Animal Biotechnology
- DNA Fingerprinting and Forensics Analysis
- Bioremediation
- Biotechnology Regulations
- Ethics

**Laboratory Safety** **1 Credits/30 Clock-Hours**

The safety course covers general laboratory safety, documentation, and signage. Students will learn about personal protection equipment, safe handling of material, safety data sheets, government regulations, and fire safety. Students will also certify in CPR and first aid.

Objectives:

- Introduction to a Safe Workplace
- Personal Protective Equipment
- Ergonomics
- Laboratory Safety
- Chemical Safety
- Fire Safety
- Safety with Biological Materials
- Safety Data Sheets
- OSHA and Government Regulations
- CPR and First Aid
- Safety Final

**Pipette Calibration and Technique** **1 Credits/30 Clock-Hours**

Precision and accuracy are important skills mastered through BTEC 1100. Students will become proficient in different types and sizes of pipettes and learn proper care and usage.

Objectives:

- Pipette Techniques
- Calibration and Maintenance of Pipette
- Pipetting Precision
- Pipetting Final

**Aseptic Technique** **1 Credit/30 Clock-Hours**

Culturing and isolating organisms will be the focus of this course. Students will become proficient in isolation, sterilization, and culturing of organisms.

Objectives:

- Media Manufacturing
- Cell Culture
- Sterilization Technique
- Aseptic Isolation
- Aseptic Final

**Chemical Instrumentation and Laboratory Techniques 3 Credits/90 Clock-Hours**

Biotechnology in manufacturing will be a focus in BTEC 1300. Students will learn Good Laboratory Practices, inventory controls, pharmaceutical development, and quality of biotechnological products.

Objectives:

- Good Laboratory Practices
- Inventory Controls
- Pharmaceutical Development and Quality Systems
- Risk Management
- Quality of Biotechnological Products
- Pharmacopoeias

**Data Analysis 3 Credits/90 Clock-Hours**

Analysis of the data collected in laboratory procedures is the focus of this course. Students will record and analyze data in proportional relationships, through graphing, and statistics. Weight, volume, temperature, light, and units involved in different stages of processing including conversions will be included.

Objectives:

- Basic Math Techniques
- Proportional Relationships
- Relationships and Graphing
- Descriptive Statistics
- Quality Laboratory Measurements
- Instrumental Methods and Electricity
- Weight
- Volume
- Temperature
- Light
- Selected Ions, pH, and Conductivity

**Quality Control and Manufacturing Practices 4 Credits/120 Clock-Hours**

Laboratories benefit from efficient and streamlined processes. Students will complete the Green Belt Level of Lean Six Sigma and can become certified. Federal regulations, standard operating procedures, and current good manufacturing practices contribute to the quality control in biotechnological manufacturing.

Objectives:

- Lean Six Sigma Introduction
- Lean Six Sigma Value Stream Mapping
- Lean Six Sigma Data Collection

- Lean Six Sigma Statistics and Data Displays
- Lean Six Sigma Variation Analysis
- Lean Six Sigma Identifying and Verifying Causes
- Lean Six Sigma Selecting and Testing Solutions
- Lean Six Sigma Green Belt Certification
- Federal Regulations
- Current Good Manufacturing Practices
- Standard Operating Procedures

**DNA Manipulation and Analysis 4 Credits/120 Clock-Hours**

DNA structure and synthesis are main processes used for many purposes in biotechnology. Students will separate biological processes through filtration, centrifugation, and bio-separations. Students will analyze DNA sequences, work with transformation and cloning, and use biotechnology process like Polymerase chain reaction and gel electrophoresis.

Objectives:

- DNA Structure and Analysis
- Filtration
- Centrifugation
- Bioseperations
- Recombinant DNA
- Sequence Analysis of Individual Genomes
- Bacterial Transformation
- Polymerase Chain Reaction
- DNA Gel Electrophoresis

**Protein Purification and Analysis 4 Credits/120 Clock-Hours**

Students will analyze protein structure, quantitation, purification, and size; along with protein use in biofuels, immunology, and immunoassays. The culmination of the program will be the Biotechnician Certified Accreditation Exam (BASE) which includes both a written and practical exam.

Objectives:

- Protein Structure and Analysis
- Protein Quantitation
- Protein Purification
- Size Chromatography
- Page Electrophoresis
- Biofuel
- Immunological Application

- Immunoassays

**Externship** **4 Credits/180 Clock-Hours**

Students will participate in an externship with a local company and apply the things they have learned in the classroom and lab in a real-world setting.

Objectives:

- Demonstrate competence in real world situations

| **Construction Craft Skilled Laborer** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 10/320)* | | | |
| **Core (10 Credits/320 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| PREF XXXX | Level One: Introduction to the trade: Materials, Fasteners & Adhesives | 1 | 32 |
| PREF XXXX | Level One: Site Layout 1: Distance Measurement & Leveling | 1 | 33 |
| PREF XXXX | Level One: Introduction to Concrete: Foundations & Slab-on Grade | 1 | 32 |
| PREF XXXX | Level One: Reinforcing Concrete | 1 | 30 |
| PREF XXXX | Level One: Handling & Placing Concrete | 1 | 33 |
| PREF XXXX | Level Two: Introduction to the trade: Materials, Fasteners & Adhesives | 1 | 30 |
| PREF XXXX | Level Two: Site Layout 1: Distance Measurement & Leveling | 1 | 31 |
| PREF XXXX | Level Two: Introduction to Concrete: Foundations & Slab-on Grade | 1 | 32 |
| PREF XXXX | Level Two: Reinforcing Concrete | 1 | 30 |
| PREF XXXX | Level Two: Handling & Placing Concrete | 1 | 37 |

## Construction Craft Skilled Laborer

FY2023 / 10 Credits (320 Clock-Hours)

### PROGRAM DESCRIPTION

This program covers standard practices, tools and materials used by skilled laborer's in on construction projects. Emphasis is placed on safe construction practices.

Objectives:

- Describe jobsite safety procedures and practices.

- Demonstrate common laborer construction practices.
- Learn positive workplace behaviors and communication skills.

**COURSE DESCRIPTIONS**

**Level One: Intro to the trade: Materials, Fasteners & Adhesives 1 Credit/32 Clock-Hours**

This course covers building materials and methods used in the construction industry. Emphasis is placed on sustainable construction practices.

Objectives:

- Describe the highway/ heavy construction industry
- Identify common building materials.
- Describe thermal and moisture protection.

**Level One: Site Layout I: Distance Measurement & Leveling 1 Credit/33 Clock-Hours**

This course covers the responsibilities of a carpenter relative to construction site layout. Emphasis is placed on drawings, control points and hand signals.

Objectives:

- Describe construction drawing, control points and hand signals
- Identify instruments for differential leveling.
- Describe applications for profile, cross-section and grid leveling.

**Level One: Intro to Concrete: Foundations & Slab-on Grade 1 Credit/32 Clock-Hours**

This course covers the properties of concrete in construction projects. Emphasis is placed on building layout work.

Objectives:

- Identify safety requirements when forming foundations and slab-on grade
- Describe how to form and finish commercial sab-on-grade
- Describe how to stablish building layout.

**Level One: Reinforcing Concrete 1 Credit/30 Clock-Hours**

This course covers general requirements for reinforcing concrete. Emphasis is placed on methods for placing reinforcing steel.

Objectives:

- Describe general requirements for working with reinforcing steel.
- Identify tools and equipment used in reinforcing steel operations.
- Describe methods for placing reinforcing steel.

**Level One: Handling & Placing Concrete 1 Credit/33 Clock-Hours**

This course covers methods for handling and placing concrete. Emphasis is placed on methods setting and finishing concrete.

Objectives:

- Describe methods for moving and handling concrete.
- Describe methods for finishing and curing concrete.
- Identify different kinds of joints in concrete structures.

**Level Two: Intro to the trade: Materials, Fasteners & Adhesives 1 Credit/30 Clock-Hours**

This course covers building materials and methods used in the construction industry. Emphasis is placed on grading and techniques.

Objectives:

- Describe calculations required to determine grades and slopes.
- Describe grading requirements.
- Demonstrate surveying techniques.

**Level Two: Site Layout I: Distance Measurement & Leveling 1 Credit/31 Clock-Hours**

This course covers the responsibilities of a carpenter relative to construction site layout. Emphasis is placed on methods for recording job layout data.

Objectives:

- Identify plans and specifications used in civil construction.
- Describe methods for recording job layout data.
- Demonstrate how to transfer and elevation up a structure.

**Level Two: Intro to Concrete: Foundations & Slab-on Grade 1 Credit/32 Clock-Hours**

This course covers the properties of concrete in construction projects. Emphasis is placed on building layout work.

Objectives:

- Identify varies types of foundations and perspective applications.
- Describe formwork locations and elevations.
- Identify methods to creating curbs and pavement.
- Identify equipment used for commercial slab-on grade projects.

**Level Two: Reinforcing Concrete 1 Credit/30 Clock-Hours**

This course covers general requirements for reinforcing concrete. Emphasis is placed on methods for placing reinforcing steel.

Objectives:

- Describe methods for tying and splicing reinforcing steel.
- Identify applications for reinforced structural steel.
- Describe methods for cutting and bending rebar.

**Level Two: Handling & Placing Concrete 1 Credit/37 Clock-Hours**

This course covers methods for handling and placing concrete. Emphasis is placed on methods placing and curing concrete.

Objectives:

- Describe methods for curing concrete.
- Describe methods for placing and placing concrete into forms.
- Identify off site equipment for mixing and conveying concrete.

| **Form Builder-Rough Carpenter (Highway)** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 10/320)* | | | |
| **Core (10 Credits/320 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| FBRC H101 | Level One: Properties of Concrete: Foundations & Slab-on Grade | 1 | 30 |
| FBRC H102 | Level One: Vertical & Horizontal Form-work; Reinforcing Concrete | 2 | 65 |
| FBRC H103 | Level One: Handling & Placing Concrete; Other Skills | 2 | 65 |
| FBRC H201 | Level Two: Properties of Concrete: Foundations & Slab-on Grade | 1 | 30 |
| FBRC H202 | Level Two: Vertical & Horizontal Form-work; Reinforcing Concrete | 2 | 65 |
| FBRC H203 | Level Two: Handling & Placing Concrete; Other Skills | 2 | 65 |

## Form Builder – Rough Carpenter (Highway)

FY2023 / 10 Credits (320 Clock-Hours)

**PROGRAM DESCRIPTION**

Students will learn to construct, erect, install or repair structures and fixtures made of wood and comparable materials, such as concrete forms, building frameworks, including partitions, joists, studding, and rafters; and wood stairways, window and door frames, and hardwood floors.

Objectives:

- Describe jobsite safety procedures and practices.
- Demonstrate form building construction practices.
- Learn positive workplace behaviors and communication skills.

- Describe standard practices used by rough carpenters in civil construction projects.

**COURSE DESCRIPTIONS**

**Level One: Properties of Concrete: Foundations & Slab-on Grade 1 Credit/30 Clock-Hours**

This course covers the properties of concrete and applications in construction projects. Emphasis is placed on vertical and horizontal form work.

Objectives:

- Identify concrete mixtures applications.
- Describe how to establish form work for star layout.
- Identify basic types of tilt up wall Panels.
- Describe methods for reinforcing concrete

**Level One: Vertical & Horizontal Form-work; Reinforcing Concrete**
**2 Credits/65 Clock-Hours**

This course covers the properties of vertical and horizontal framework in construction projects. Emphasis is placed on safe practices related to form work.

Objectives:

- Describe how to establish form work for star layout.
- Identify basic types of tilt up wall Panels.
- Describe methods for reinforcing concrete.

**Level One: Handling & Placing Concrete; Other Skills 2 Credits/65 Clock-Hours**

This course covers building materials and methods used in the construction industry. Emphasis is placed on sustainable construction practices.

Objectives:

- Identify common building materials.
- Describe thermal and moisture protection.

**Level Two: Properties of Concrete: Foundations & Slab-on Grade 1 Credit/30 Clock-Hours**

This course covers the properties of concrete and applications in construction projects. Emphasis is placed on vertical and horizontal form work.

Objectives:

- Identify concrete mixtures applications.
- Describe how to establish form work for star layout.
- Identify basic types of tilt up wall Panels.
- Describe methods for reinforcing concrete.

**Level Two: Vertical & Horizontal Form-work; Reinforcing Concrete**
**2 Credits/65 Clock-Hours**

This course covers general requirements for reinforcing concrete. Emphasis is placed on methods for placing reinforcing steel.

Objectives:

- Describe common tilt-up wall panels operations.
- Describe rigging practices.
- Describe standard site layout

**Level Two: Handling & Placing Concrete; Other Skills 2 Credits/65 Clock-Hours**

This course covers methods for handling and placing concrete. Emphasis is placed on methods placing and curing concrete.

Objectives:

- Describe methods for curing concrete.
- Describe methods for placing and placing concrete into forms.
- Identify off site equipment for mixing and conveying concrete.

| **Form Builder-Rough Carpenter** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 10/324)* | | | |
| **Core (10 Credits/324 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| FBRC 1A01 | Math; Orientation; Materials; Tools; Trenching & Excavation | 2 | 60 |
| FBRC 1A02 | Rigging Equipment & Practices | 0 | 12 |
| FBRC 1B01 | Properties of Concrete: Vertical & Horizontal Framework | 2 | 60 |
| FBRC 1B02 | Foundations & Slab-on Grade: Reinforcing Concrete | 1 | 30 |
| FBRC 2A01 | Light Equipment: Thermal & Moisture Protection; Handling Concrete | 1 | 30 |
| FBRC 2A02 | Reading Plans & Elevations | 0 | 12 |
| FBRC 2A03 | Basic Stair Layout; Welding | 1 | 30 |
| FBRC 2B01 | Tilt-up Wall Panels; Site Layout & Preparation | 1 | 30 |
| FBRC 2B02 | Site Layout 2: Commercial Drawings; Scheduling; Problem Solving | 2 | 60 |

**Form Builder – Rough Carpenter**

FY2023 / 10 Credits (324 Clock-Hours)

**PROGRAM DESCRIPTION**

This program covers standard practices and materials used by rough carpenters in commercial construction projects. Emphasis is placed on civil form building construction practices.

Objectives:

- Describe jobsite safety procedures and practices.
- Demonstrate form building construction practices.
- Learn positive workplace behaviors and communication skills.
- Describe standard practices used by rough carpenters in commercial construction projects.

**COURSE DESCRIPTIONS**

**Math; Orientation; Materials; Tools; Trenching & Excavation 2 Credits/60 Clock-Hours**

This course covers general skills and techniques used by carpenters in the construction industry. Emphasis will be placed on hand and power tools recognition, construction math and reading construction drawings.

Objectives:

- Identify craft hand and power tools.
- Describe various types of construction drawings
- Demonstrate basic construction math skills

**Rigging Equipment & Practices 0 Credits/12 Clock-Hours**

This course provides a basic knowledge of rigging practices. Emphasis is placed on safe rigging/hosting practices.

Objectives:

- Demonstrate safe rigging techniques.
- Identify common rigging hardware and equipment.
- Determine sling capacities and angels.

**Properties of Concrete: Vertical & Horizontal Framework 2 Credits/60 Clock-Hours**

This course covers the properties of vertical and horizontal framework in construction projects. Emphasis is placed on safe practices related to form work.

Objectives:

- Describe how to establish form work for star layout.
- Identify basic types of tilt up wall Panels.
- Describe methods for reinforcing concrete.

**Foundations & Slab-on Grade: Reinforcing Concrete 1 Credit/30 Clock-Hours**

This course covers the properties of concrete and applications in construction projects. Emphasis is placed on vertical and horizontal form work.

Objectives:

- Identify concrete mixtures applications.
- Describe how to establish form work for star layout.
- Identify basic types of tilt up wall Panels.
- Describe methods for reinforcing concrete.

**Light Equipment: Thermal & Moisture Protection; Handling Concrete**

**1 Credit/30 Clock-Hours**

This course covers building materials and methods used in the construction industry. Emphasis is placed on sustainable construction practices.

Objectives:

- Identify common building materials.
- Describe thermal and moisture protection.

**Reading Plans & Elevations 0 Credits/12 Clock-Hours**

This course provides a basic knowledge of road, utility, and

Objectives:

- Describe construction drawing, control points and hand signals
- Identify instruments for differential leveling.

**Basic Stair Layout; Welding 1 Credit/30 Clock-Hours**

This course covers oxyfuel cutting and arc welding. Emphasis is placed on metal stair layout and fabrication.

Objectives:

- Identify components of an ox yfuel cutting outfit.
- Demonstrate how to use oxyfuel cutting equipment.
- Identify components of an arc-welding outfit.

**Tilt-up Wall Panels; Site Layout & Preparation 1 Credit/30 Clock-Hours**

This course provides a basic knowledge of road, utility, and site design and layout. Emphasis is placed on deferential leveling and angular/distance measuring.

Objectives:

- Describe common tilt-up wall panels operations.
- Describe rigging practices.
- Describe standard site layout

**Site Layout II: Commercial Drawings; Scheduling; Problem Solving**

**2 Credits/60 Clock-Hours**

This course provides a basic knowledge of road, utility, and site design and layout. Emphasis is placed on deferential leveling and angular/distance measuring.

Objectives:

- Describe common trenching and excavation operations.
- Describe common scheduling practices.
- Describe how to apply conflict resolution techniques in professional settings

| **Heavy Equipment Operator** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 15/480)* | | | |
| **Core (15 Credits/480 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| PREF XXXX | Basic Safety & Orientation | 1 | 30 |
| PREF XXXX | Introduction to Tools/Drawings | 1 | 30 |
| PREF XXXX | Employability Skills | 1 | 30 |
| PREF XXXX | Basic Rigging & Operational Techniques | 1 | 34 |
| PREF XXXX | Utility Tractors/Grades Part 1 | 1 | 30 |
| PREF XXXX | Hands-on Practice | 0 | 6 |
| PREF XXXX | Introduction to Earth Moving, Dump Trucks | 1 | 33 |
| PREF XXXX | Rollers, Scrapers, Loaders, Forklifts | 2 | 66 |
| PREF XXXX | Excavation Math, Grades, Blueprints | 2 | 61 |
| PREF XXXX | Crew Leader Skills, Dozers, Backhoes | 2 | 60 |
| PREF XXXX | Excavators | 1 | 30 |
| PREF XXXX | Motor Graders | 1 | 30 |
| PREF XXXX | Advanced Operational Techniques, Finishing & Grading | 1 | 34 |
| PREF XXXX | Soils | 0 | 6 |

**Heavy Equipment Operator**

FY2023 / 15 Credits (480 Clock-Hours)

## PROGRAM DESCRIPTION

This program covers the role of heavy equipment operators in the construction industry. Emphasis is placed on heavy building and civil construction practices.

Objectives:

- Identify the different types of heavy equipment.
- Describe the career opportunities associated with heavy equipment operation.
- Describe the training available to heavy equipment operators.

## COURSE DESCRIPTIONS

**Basic Safety & Orientation** **1 Credit/30 Clock-Hours**

This course covers the Occupational Safety and Health Act (OSHA) and jobsite safety procedures and practices. Emphasis will be placed on ethics as it relates to safety.

Objectives:

- Describe the importance of safety in the operation of heavy equipment.
- Describe the uses of heavy equipment.
- Describe the career opportunities associated with heavy equipment operation.

**Introduction to Tools/Drawings** **1 Credit/30 Clock-Hours**

This course covers general skills and techniques used by carpenters in the construction industry. Emphasis will be placed on hand and power tools recognition, construction math and reading construction drawings.

Objectives:

- Identify craft hand and power tools.
- Describe various types of construction drawings
- Demonstrate basic construction math skills

**Employability Skills** **1 Credit/30 Clock-Hours**

This course covers professional construction industry communication practices. Emphasis will be placed on communication process.

Objectives:

- Describe how the communication process relates to job performance
- Describe how to apply conflict resolution techniques in professional settings
- Demonstrate how to effectively receive and deliver constructive criticism

**Basic Rigging & Operational Techniques 1 Credit/34 Clock-Hours**

This course covers the basic rigging & operational techniques. Emphasis will be placed on ethics as it relates to safety.

Objectives:

- Identify the use of slings and common rigging hardware.
- Describe basic hitch configuration and connections.
- Describe load handling practices.

**Utility Tractors/Grades Part I 1 Credit/30 Clock-Hours**

This course covers the operation of general utility tractors in the construction industry. Emphasis will be placed on safety as it relates to heavy equipment operations.

Objectives:

- Identify the operating controls of a typical utility tractor.
- Describe different types of transmission use in utility tractors.
- Describe methods for operating utility tractors.

**Hands-On Practice 0 Credits/6 Clock-Hours**

This course covers hands on applications of heavy equipment operating. Emphasis will be placed on safety as it relates to heavy equipment operations.

Objectives:

- Demonstrate proper inspection practices.
- Demonstrate proper heavy equipment operating.
- Demonstrate industry methods and techniques when operating heavy equipment.

**Introduction to Earth Moving, Dump Trucks 1 Credit/33 Clock-Hours**

This course covers basic concepts and procedures related to the use of heavy equipment to perform earthmoving work. Emphasis will be placed on safety as it relates to earth moving operations.

Objectives:

- Describe safe practices as they relate to earth moving operations
- Identify equipment for earth moving operations.
- Describe soil stabilization methods.

**Rollers, Scrapers, Loaders, Forklifts 2 Credits/66 Clock-Hours**

This course covers basic concepts and procedures related rollers, scrapers, loaders, forklifts. Emphasis will be placed on safety as it relates to heavy equipment operations.

Objectives:

- Identify various types of heavy equipment and primary uses
- Describe drive systems of rollers, scrapers, loaders, forklifts
- Describe hydraulic systems of rollers, scrapers, loaders, forklifts

**Excavation Math, Grades, Blueprints 2 Credits/61 Clock-Hours**

This course covers math, grades, blueprints relative to heavy equipment operations. Emphasis is placed on drawings and control points.

Objectives:

- Describe the highway/ heavy construction industry
- Identify common civil/building construction blueprints.
- Describe grading practices with heavy equipment operations.

**Grades 2 Credits/60 Clock-Hours**

This course covers grading preparations with heavy equipment. Emphasis is placed on sloping and control points.

Objectives:

- Describe terms use in grade work.
- Identify types of stakes used in grade work.
- Identify types of equipment used to identify stakes used in grade work

**Excavators 1 Credit/30 Clock-Hours**

This course covers basic concepts and procedures related excavators. Emphasis will be placed on safety as it relates to heavy equipment operations.

Objectives:

- Identify and common types of excavators.
- Describe common uses of excavators.
- Identify major parts of excavators.

**Motor Graders 1 Credit/30 Clock-Hours**

This course covers basic concepts and procedures related motor graders. Emphasis will be placed on safety as it relates to heavy equipment operations.

Objectives:

- Describe common uses and types of motor graders.
- Describe major parts of a motor grader.
- Identify motor grader instrumentation.

**Advanced Operational Techniques, Finishing & Grading 1 Credit/34 Clock-Hours**

This course covers basic concepts and procedures related finishing and grading. Emphasis will be placed on safety as it relates to heavy equipment operations

Objectives:

- Identify equipment used in finish grading.
- Describe how laser instruments are used in finish grading.
- Describe how a Global Positioning System (GPS) and a robotic total station are used in finish grading.

**Soils 0 Credit/6 Clock-Hours**

This course covers basic concepts and procedures related soil identification. Emphasis will be placed on safety as it relates to heavy equipment operations

Objectives:

- Describe guidelines associated with soil Identification
- Describe soil inspection procedures.
- Describe preventive soil inspection requirements.

| **Medical Scribe** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 15/480* | | | |
| **Core (15 Credits/480 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| MEDS 0805 | Beginning Medical Scribe | 2 | 60 |
| HLTH 1000 | Medical Terminology | 2 | 60 |
| HLTH 1010 | Anatomy and Physiology | 3 | 90 |
| MEDS 0810 | Keyboarding for Medical Scribes | 1 | 30 |
| MEDS 0825 | Heath Insurance & Billing Basics | 1 | 30 |
| MEDS 0835 | Medical Scribe Clinical Applications | 3 | 90 |
| MEDS 0845 | Job Seeking Skills for Medical Scribes | 1 | 30 |
| MEDS 0870 | Medical Scribe Externships | 2 | 90 |

# Utah System of Higher Education

## Medical Scribe

FY2023 / 15 Credits (480 Clock-Hours)

### PROGRAM DESCRIPTION

The Medical Scribe program prepares students to work as a medical scribe specialist. Students learn to use electronic health records (EHR) in order to document medical data obtained during patient visits. Students are required to synthesize and organize this data into a coherent entry so that it complies with federal regulations and insurance requirements. Students gain basic knowledge of medical terminology, anatomy and physiology; fundamental understanding of insurance billing and coding and entry-level knowledge of medical law.

Objectives:

The Medical Scribe program prepares students to perform specific entry-level skills and verify knowledge required for the occupation, to include the following:

- Medical terminology, anatomy, physiology, and medical law knowledge
- Basic knowledge of EHRs including data entry, formatting of information obtained during the physical examination and prescribed treatments
- Typing proficiency of at least 60 words per minute
- Fundamental understanding of the documentation required by insurance billing and coding entities
- Basic telephone etiquette and triage
- Ability to work competently and in a timely manner to complete assigned work.

### COURSE DESCRIPTIONS

**Beginning Medical Scribe 2 Credits/60 Clock-Hours**

This course is an introduction to the duties and responsibilities of the medical scribe in the primary care and emergency department environments. The course provides an overview of the daily duties performed by medical scribes and covers basic pharmacology, medicolegal considerations regarding patient privacy and the elements that comprise the medical note.

Objectives:

- Describe the general roles and responsibilities of the medical scribe.
- List duties which are prohibited to be performed by medical scribes.
- Describe the classification and recommended uses of common medications used in the primary care and emergency room setting.
- Define the elements that comprise the medical note.
- Give examples of the common reasons for visits in the family practice/primary care clinic.
- Give examples of the common reasons for visits to the emergency department.
- Describe protected health information (PHI) as stated in the HIPAA Privacy Rule.

- List common day-to-day security practices performed by clinic personnel to prevent unlawful disclosures of PHI.
- Compare and contrast the differences between the EMR and EHR systems used health care facilities.

**Medical Terminology 2 Credit/60 Clock-Hours**

This course will provide instruction on how to interpret and understand medical language as well as the basic structure of medical words. Additionally, this course will explore interpretations of medical abbreviations for those seeking a career in medicine.

Objectives:

- Identify the role of the four main types of word parts that make up medical terms.
- Define word parts.
- Define medical words.
- Describe steps to locate medical words using either a medical dictionary or an online resource.
- Write the singular, plural and adjective forms of medical words.
- Recognize the importance of spelling medical terms correctly.

**Anatomy and Physiology 3 Credits/90 Clock-Hours**

This course will explore the basic structure and function of the human body, as well as common disease processes and treatments.

Objectives:

- Describe the structural organization of the human body
- List the body systems
- Describe body planes, directional terms, quadrants and cavities
- List the major organs that comprise each body system
- Identify the anatomical location of major organs in each body system
- Compare the structure and function of the human body across the life span
- Describe the normal function of each body system
- Identify common pathology related to each body system

**Keyboarding for Medical Scribes 1 Credits/30 Clock-Hours**

This is a computer-based, self-paced course designed to develop typing speed and accuracy to a minimum proficiency of 60 wpm.

Objectives:

- Demonstrate a minimum typing speed of 60 words per minute on the course exit evaluation.
- Demonstrate a typing accuracy that does not exceed the number of errors allowed in each exercise and the course exit evaluation.

- State the ergonomic elements that can reduce typing-related injuries.

**Health Insurance & Billing Basics 1 Credits/30 Clock-Hours**

This course provides an introduction to medical insurance coding, billing, and claim processing procedures and how it relates to the documentation in the patient's health record. Provides instruction and practice of medical office financial procedures.

Objectives:

- Describe how documentation in the electronic health record (EHR) affects the billing and coding process
- Define evaluation and management (E/M) levels and their purpose in the claims and billing process
- Define Current Procedural Terminology (CPT) and its purpose in the billing process
- Define the Quality Payment Program
- List the 10 steps of the billing process

**Medical Scribe Clinical Applications 3 Credits/90 Clock-Hours**

This course provides practice in synthesizing a complete and accurate medical note from the interaction observed between the provider and the patient. Emphasis will be placed on using correct terminology, abbreviations, spelling, and format. Instruction will also include accessing, navigating, and entering information into the electronic health record.

Objectives:

- Document the patient/provider encounter into the electronic patient record.
- Make corrections as necessary to the health record that meet legal requirements.
- Describe the elements that comprise a complete medical note.
- Anticipate and retrieve relevant documents related to the patient's condition the provider might need.
- Identify the elements necessary for E/M determination by coding and billing staff.
- Navigate the EHR/EMR before, during and after the patient encounter.

**Job Seeking Skills for Medical Scribes 1 Credits/30 Clock-Hours**

This course provides experience in developing job-seeking skills necessary to find gainful employment.

Objectives:

- Complete a resume
- Complete a reference sheet
- Complete a cover letter
- Respond to common job interview questions
- Compile a list of questions to ask in job interviews

- Write a thank-you letter after an interview
- Participate in a practice job interview

**Medical Scribe Externships** **2 Credits/90 Clock-Hours**

This course gives students practical clinical experience working as a medical scribe in an operational medical facility. Medical scribe students will work under the direction of a clinical supervisor and are expected to apply the knowledge and skills learned in the classroom to a clinical setting. Additionally, this course provides students with experience in developing job-seeking skills necessary to find gainful employment.

Objectives:

- Perform skills of the medical scribe under the direction of a clinical supervisor.

| **Nail Technician Instructor** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 5/150* | | | |
| **Core (5 Credits/150 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| NTEI 2200 | Nail Technician Instructor I | 1 | 30 |
| NTEI 2205 | Nail Technician Instructor II | 1 | 30 |
| NTEI 2210 | Nail Technician Instructor III | 1 | 30 |
| NTEI 2215 | Nail Technician Instructor IV | 1 | 30 |
| NTEI 2220 | Nail Technician Instructor V | 1 | 30 |

**Nail Technician Instructor**

FY2023 / 5 Credits (150 Clock-Hours)

**PROGRAM DESCRIPTION**

This program prepares a student to take the written test of the Utah Department of Professional Licensing exam to become a Nail Technician instructor. The program trains the student in a variety of settings using theory, classroom and records management, teaching methods and organization to take the DOPL instructor test under the direction of the Tooele Technical College Nail Technician Instructor.

Objectives:

- Proficient in basic teaching skills for career education instructors.
- Prove competency in effective communication with students, clients, and other instructors.
- Apply the techniques and guidelines for being an Instructor.
- Apply concepts for Professional Development as a Career Education Instructor.

## COURSE DESCRIPTIONS

**Nail Technician Instructor I** **1 Credits/30 Clock-Hours**

Course Description

In this course the Nail Technician Instructor students will be introduced to the art of teaching. They will learn about being a professional educator, job duties, classroom management and administrative duties. Students will be taught about lesson planning. They will be exposed to learning styles and will be given techniques for effective teaching and learning methods.

Objectives:

- Describe the role of a professional teacher including basic job duties, time management, professional ethics and best practices.
- Design a lesson plan including a list of teaching materials.
- Describe techniques for effective classroom management.
- Describe the administrative duties of a professional teacher.
- Define desired learning goals for students.
- Outline strategies for learning basic math and reading skills.
- Create a lesson plan teaching test taking skills and basic study skills.
- Identify multiple intelligences and learning styles.
- List and describe the four steps in learning.
- Identify effective teaching and learning methods.

**Nail Technician Instructor II** **1 Credits/30 Clock-Hours**

This course is all about communication and providing information to students. Nail Technician Instructor students will learn techniques for effective communication and listening. Students will learn about presentation techniques, creating a positive classroom environment and will study learner behavior. Students will be exposed to some of the most common learning disabilities and how to accommodate these barriers. Student will also discuss other barriers to learning. Finally, students will review strategies for teaching to the fast-paced learner.

Objectives:

- Describe effective communication techniques and identify barriers to effective communication.
- Define and describe effective listening techniques and their role in effective communication.
- Identify various communication styles.
- Accurately describe the C-R-E-A-T-E model.
- Describe what makes an effective presentation.
- Describe a positive classroom environment.
- Identify principles for managing learner behavior, including difficult learner behavior.
- Identify special learning needs.
- List some of the most common learning disabilities.

- Describe teaching techniques to accommodate some of the most common learning disabilities.
- Identify barriers to learning.
- Describe teaching techniques for the fast-paced learner.

**Nail Technician Instructor III 1 Credits/30 Clock-Hours**

In this course the Nail Technician Instructor student will go more in depth on curriculum development, lesson planning, grading methods, and available technologies for the classroom. Students will discuss strategies for effective academic advising and student motivation.

Objectives:

- Describe the steps and principles of curriculum development.
- Create a lesson plan for a variety of teaching scenarios.
- Describe different types of educational aids and technology for the classroom.
- Describe grading methods and grading components.
- Describe effective academic advising strategies.

**Nail Technician Instructor IV 1 Credits/30 Clock-Hours**

Nail Technician Instructor students will be learning about how to teach the business of salon work to students. This course covers how to teach salon philosophy, customer service, business management, marketing, building clientele, accounting requirements and salon profitability. Students will demonstrate the value of having a professional portfolio. Students will learn how to teach in a salon and how to manage multiple students including how to create a student orientation. Students will learn about student retention and will be able to identify the various roles of a professional educator.

Objectives:

- Describe salon philosophy, customer service, business management and salon profitability.
- List the steps to building a strong clientele list and techniques for marketing the salon.
- Describe salon accounting requirements.
- Create a professional portfolio with at least a couple of exhibits.
- Share techniques for salon teaching and managing multiple students.
- Describe student retention strategies and the importance of student retention.
- Design a new student orientation.
- Identify and describe various professional educator roles such as educator to learner, educator to educator, and educator to administration.

**Nail Technician Instructor V 1 Credits/30 Clock-Hours**

In this last course, Nail Technician Instructor students will review the importance of mental health and the value of laughter. Students will learn about teams and teamwork. Students will learn about goal setting and goal management. Students will learn about the process for evaluating professional

performance and will review applicable industry law, rules and regulations. This course culminates with a exam review and a state practice exam.

Objectives:

- Describe the importance of maintaining a healthy mindset.
- Identify stress management techniques.
- Elaborate on the benefits of laughter in the workplace and the benefits to physical health.
- Describe what it means to have a strong work ethic.
- Describe models for goal setting the importance of goal management.
- Define term team and team work.
- Describe techniques for team building.
- Describe the process for evaluating professional performance.
- Review applicable industry law, rules and regulations.
- Complete a state licensing practice exam.

| **Cabinetry (Secondary)** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 12/360* | | | |
| **Core (12 Credits/360 Clock Hours)** | | **Credits** | **Clock-Hours** |
| CABM 1005 | Woodworking | 2 | 60 |
| CABM 1015 | Furniture Design 1 | 2 | 60 |
| CABM 1025 | Furniture Design 2 | 2 | 60 |
| CABM 1035 | Furniture Design 3 | 2 | 60 |
| CABM 1045 | Furniture Design 4 | 2 | 60 |
| CABM 1055 | Furniture Design 5 | 2 | 60 |

**Cabinetry (Secondary)**

FY2023 / 12 Credits (360 Clock-Hours)

**PROGRAM DESCRIPTION**

The Cabinetry program is designed to teach the fundamentals of cabinet and furniture construction. While in the program, students will learn transferable, effective work skills that will be of value in most occupations, as well as in the cabinetry industry. Students will build a cabinet and or furniture project of their choice. Students will be instructed in the processes of woodworking from fundamentals of planning

and design to finish work. The student will be instructed in the safe use of woodworking power tools and machines.

Objectives:

- Construction Safety
- Gain Knowledge on the Fundamentals of Cabinetry and Furniture Construction
- Introductory Project Management Skills
- Design and Construct a Project

**COURSE DESCRIPTIONS**

**Woodworking 2 Credits/60 Clock-Hours**

Learn basic math measuring concepts. Discover basic concepts in design, joinery, finishes, hardware, and complete cabinet construction. Safety will be stressed with every concept.

Objectives:

- Demonstrate Construction Math
- Design Planning and Estimating
- Demonstrate Knowledge of Abrasives and Finishes
- Demonstrate Cabinet Construction
- Demonstrate Safety
- Demonstrate Knowledge of Joinery, Fasteners and Adhesives
- Demonstrate Cabinet Hardware Installation

**Furniture Design I 2 Credits/60 Clock-Hours**

Safely design, plan, and estimate a complete cabinet project of choice. Study and work through completing the project using the processes of joinery, abrasives and finishes, hardware installation, cabinet construction, and moldings and millwork.

Objectives:

- Demonstrate Construction Math
- Demonstrate Design Planning and Estimating
- Demonstrate Abrasives and Finishes
- Demonstrate Cabinet Construction
- Demonstrate Safety
- Demonstrate Knowledge of Joinery, Fasteners and Adhesives
- Demonstrate Cabinet Hardware Installation
- Demonstrate Moldings and Millworks

**Furniture Design II** **2 Credits/60 Clock-Hours**

Safely design, plan, and estimate a complete cabinet or furniture project of choice. Develop level II skills in cabinet making through continued use of the process joinery, abrasives and finishes, hardware installation, cabinet construction, and moldings and millwork.

Objectives:

- Demonstrate Construction Math – Level II
- Design Planning and Estimating – Level II
- Demonstrate Knowledge of Abrasives and Finishes – Level II
- Demonstrate Cabinet Construction – Level II
- Demonstrate Safety- Level II
- Demonstrate Knowledge of Joinery, Fasteners and Adhesives – Level II
- Demonstrate Cabinet Hardware Installation – Level II
- Demonstrate Moldings and Millworks – Level II

**Furniture Design III** **2 Credits/60 Clock-Hours**

Safely design, plan, and estimate a complete cabinet or furniture project of choice. Develop level III skills in cabinet making through continued use of the process joinery, abrasives and finishes, hardware installation, cabinet construction, and moldings and millwork.

Objectives:

- Demonstrate Construction Math – Level III
- Design Planning and Estimating – Level III
- Demonstrate Knowledge of Abrasives and Finishes – Level III
- Demonstrate Cabinet Construction – Level III
- Demonstrate Safety- Level III
- Demonstrate Knowledge of Joinery, Fasteners and Adhesives – Level III
- Demonstrate Cabinet Hardware Installation – Level III
- Demonstrate Moldings and Millworks – Level III

**Furniture Design IV** **2 Credits/60 Clock-Hours**

Safely design, plan, and estimate a complete cabinet or furniture project of choice. Develop level IV skills in cabinet making through continued use of the process joinery, abrasives and finishes, hardware installation, cabinet construction, and moldings and millwork.

Objectives:

- Demonstrate Construction Math – Level IV
- Design Planning and Estimating – Level IV
- Demonstrate Knowledge of Abrasives and Finishes – Level IV
- Demonstrate Cabinet Construction – Level IV

- Demonstrate Safety- Level IV
- Demonstrate Knowledge of Joinery, Fasteners and Adhesives – Level IV
- Demonstrate Cabinet Hardware Installation – Level IV
- Demonstrate Moldings and Millworks – Level IV

**Furniture Design V** **2 Credits/60 Clock-Hours**

Safely design, plan, and estimate a complete cabinet or furniture project of choice. Develop advance level V skills in cabinet making through continued use of the process joinery, abrasives and finishes, hardware installation, cabinet construction, and moldings and millwork.

Objectives:

- Demonstrate Construction Math – Level V
- Design Planning and Estimating – Level V
- Demonstrate Knowledge of Abrasives and Finishes – Level V
- Demonstrate Cabinet Construction – Level V
- Demonstrate Safety- Level V
- Demonstrate Knowledge of Joinery, Fasteners and Adhesives – Level V
- Demonstrate Cabinet Hardware Installation – Level V
- Demonstrate Moldings and Millworks – Level V

| **Well Control Supervisor** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 1/30)* | | | |
| **Core (1 Credits/30 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| PETT 1200 | Well Control Supervisor | 1 | 30 |

## Well Control Supervisor

FY2023 / 1 Credits (30 Clock-Hours)

**PROGRAM DESCRIPTION**

The Well Control Supervisor program prepares students with the in-depth knowledge of well and influx control. The students learn to safely supervise a drilling crew; to be aware of the risk while on an oil or gas well location and to ensure the safety of the employees, the drilling equipment and environment of a drilling site.

The Well Control Supervisor training program is accredited by the International Association of Drilling Contractors (IADC).

Objectives:

- Knowledge of Well Control Safety.
- Knowledge of Drilling Equipment.

**COURSE DESCRIPTIONS**

**Well Control Supervisor** **1 Credit/30 Clock-Hours**

Gain in-depth knowledge of well control and influx control to safely supervise a drilling crew and ensure safety of the employees on site as well as the drilling equipment. Learn through well control simulators with computer software and hardware, and 3-D graphics needed to facilitate a realistic training environment.

Objectives:

- Demonstrate Knowledge of Well Control Safety.
- Demonstrate Knowledge of Drilling Equipment Usage.

| **Well Control Workover Operator** | | | |
|---|---|---|---|
| *Certificate of Program Completion (Catalog Year: 2023, Required Credits/Clock-Hours: 1/35)* | | | |
| **Core (1 Credits/35 Clock-Hours)** | | **Credits** | **Clock-Hours** |
| PETT 2220 | Well Control Workover Operator | 1 | 35 |

## Well Control Workover Operator

FY2023 / 1 Credits (35 Clock-Hours)

**PROGRAM DESCRIPTION**

The Well Control Workover Operator program is designed for service company equipment operators who are primarily responsible for workover operation processes of well control. The curriculum identifies a body of knowledge and a set of job skills that can be used to provide well control training for workover operations personnel. The Well Control Workover Operator Certificate is IADC accredited.

Objectives:

- Knowledge of Workover Rig Safety.
- Knowledge of Workover Rig Equipment.

**COURSE DESCRIPTIONS**

**Well Control Workover Operator** **1 Credit/35 Clock-Hours**

Learn to mitigate and manage risks by understanding the principles and calculations to maintain adequate pressure. Understand the philosophy and operations of barrier systems. Learn to detect the possible causes of influxes. Learn the Boyle's Law concept. Identify the types and functions of fluids. Learn equipment utilized in the wellbore above and below ground and procedures used during well entry, workover operations, and shut in. Cover the objectives and techniques of well kill including bull heading, lube and bleed, forward and reverse circulation, and pump startup and shutdown. Discuss uncommon situations. Learn operations in organizing a well control operation. Learn drill intervals, gas detection, fluid-gas separators, and the wellhead control panel.

Objectives:

- Demonstrate Knowledge of Down Hole Pressures.
- Demonstrate Knowledge and Usage of Drilling Fluids.
- Demonstrate Knowledge of Down Hole Circulation.