

# BCAT CSLOs 2022-23

De Anza College

Date: 09-14-2022

<b>Applied Technologies</b>
<b>APRN - Auto. Apprenticeship</b>
<b>CSLO</b>
<b>APRND050A - Introduction to Automotive Principles</b> <ul style="list-style-type: none"><li>• Answer correctly, selected questions on the final exam concerning engine theory, lubrication, and basic electrical fundamentals.</li></ul>
<b>APRND050B - Applied Automotive Principles</b> <ul style="list-style-type: none"><li>• Answer correctly, selected questions on the final exam concerning engine service, cooling system maintenance and battery testing.</li></ul>
<b>APRND051A - Introduction to Automotive Principles - Chassis Systems</b> <ul style="list-style-type: none"><li>• Answer correctly, selected questions on the final exam concerning drive line theory, clutch and transmission service and diagnosis.</li></ul>
<b>APRND051B - Applications of Automotive Principles - Chassis Systems</b> <ul style="list-style-type: none"><li>• Answer correctly, selected questions on the final exam concerning tire service including balancing, disc and drum brake service, and front and rear suspension service.</li></ul>
<b>APRND053A - Automotive Mechanisms</b> <ul style="list-style-type: none"><li>• Demonstrate the ability to diagram and construct compound mechanical and pneumatic machines, calculating the mechanical advantage for the individual components as well as the complete system.</li></ul>
<b>APRND060. - Automotive Electrical Systems</b> <ul style="list-style-type: none"><li>• Demonstrate the ability to diagram and construct simple electrical circuits, calculating and measuring voltage, amperage, and resistance using Ohm's Law and a digital multimeter.</li><li>• Develop a testing sequence to diagnose inoperative charging, cranking, and battery circuits.</li></ul>
<b>APRND060A - Electrical Schematic Diagnosis</b> <ul style="list-style-type: none"><li>• Analyze an open circuit problem in which all or part of the circuit is inoperative.</li></ul>
<b>APRND060B - Automotive Electronics</b> <ul style="list-style-type: none"><li>• Analyze the operation of engine control systems where computer management is prevalent.</li></ul>
<b>APRND060C - Automotive Ignition, Fuel and Emission Systems</b> <ul style="list-style-type: none"><li>• Identify major ignition and fuel system components.</li></ul>
<b>APRND060D - Ignition Analysis and Oscilloscope Diagnosis</b> <ul style="list-style-type: none"><li>• Identify the purpose of an automotive ignition system.</li></ul>
<b>APRND060E - Automotive Fuel Injection</b> <ul style="list-style-type: none"><li>• Describe the principles of electronic fuel injection.</li></ul>
<b>APRND060F - No-Start Diagnosis</b> <ul style="list-style-type: none"><li>• Identify basic internal combustion principles for the gasoline engine.</li></ul>
<b>APRND060G - Advanced Scan Tool Diagnosis</b> <ul style="list-style-type: none"><li>• Identify the purpose of an automotive scan tool.</li></ul>
<b>APRND060H - Advanced Drivability and Onboard Diagnostics</b> <ul style="list-style-type: none"><li>• Describe the onboard self-test and diagnostic capabilities of various manufacturers' vehicle control systems.</li></ul>
<b>APRND060J - Advanced Lab Scope and Waveform Diagnosis</b> <ul style="list-style-type: none"><li>• Analyze the various designs and applications of the diagnostic oscilloscope and power graphing meter.</li></ul>
<b>APRND060K - Automotive Body Electrical Systems</b> <ul style="list-style-type: none"><li>• The student will show an understanding of a resistive multiplexed switch circuits operation and diagnosis through a written essay.</li></ul>

**APRND060N - Hybrid Vehicle Safety and Maintenance**

- Identify the function of an automotive hybrid propulsion system.

**APRND061A - Automotive Brake Systems**

- Students will understand proper brake inspection procedures.

**APRND061B - Electronically Controlled Brake Systems**

- The student will be able to describe the differences in the two major types of wheel speed sensors used on cars and light trucks as well as how they function, and how to diagnose a failure of the component.

**APRND062A - Automotive Suspension, Steering and Alignment**

- Students will understand proper under car inspection procedures.
- Students will understand proper vehicle wheel alignment procedures.

**APRND062B - Advanced Wheel Alignment**

- The learner will understand the concepts and be able to diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine necessary action.

**APRND063. - Automatic Transmissions and Transaxles**

- Show an understanding of how a torque converter works.
- Show an understanding of the inputs to transmission that create both up and downshifts.

**APRND063A - Advanced Manual Drive Train**

- The student will understand the workings of a manual transmission clutch assembly.
- The student will be able to calculate first and second order frequency vibrations for a rear wheel drive propeller shaft.

**APRND063D - Transmission Diagnostic and Repair Techniques**

- Show an understanding of the operation of transmission solenoids and the corresponding voltage values for diagnostic purposes.

**APRND064. - Automotive Machining and Engine Repair**

- Student should be able to answer selected questions on the final concerning engine theory, valve events, engine diagnostics, and engine assembly.

**APRND64HP - High Performance Engine Preparation**

- Student will answer correctly, selected questions on the final exam concerning blueprinting operations, engine theory, camshaft design, parts reliability upgrades. These are areas essential to the understanding of performance engines.

**APRND065P - Smog Inspector - Level 1 Training**

- Student will be able to answer correctly, selected questions on the final exam concerning Bureau of Automotive Repair rules, regulations, and proper procedures to perform a smog check in the state of CA.

**APRND065W - Smog Inspector - Level 2 Training**

- Student will be able to answer correctly, selected questions on the final exam concerning Bureau of Automotive Repair rules, regulations, and proper procedures to perform a smog check in the state of CA.

**APRND066. - Automotive Air Conditioning**

- Students will understand proper refrigerant recovery, recycling, and handling procedures.

**APRND067A - Hybrid Electric Vehicles**

- Identify the function of an automotive hybrid propulsion system.

**APRND067B - Plug-In Electric Vehicle Technology**

- Demonstrates the ability to safely maintain and service a vehicle that uses a high voltage battery as a fuel source for the main propulsion.

**APRND067G - Gaseous Fuels**

- Students will interpret the environmental affects gaseous fuel produce and which fuel has the lowest effect on our world. This will be determined with a group of questions on the final exam.

**APRND067J - Introduction to Automotive and Light Truck Diesel Systems**

- Demonstrate the ability to understand diesel theory.
- Develop a testing system to systematically trouble shoot diesel fuel systems.

**AUTO - Automotive Technology****CSLO****AUTOD050A - Introduction to Automotive Principles**

- Answer correctly, selected questions on the final exam concerning engine theory, lubrication, and basic electrical fundamentals.

**AUTOD050B - Applied Automotive Principles**

- Answer correctly, selected questions on the final exam concerning engine service, cooling system maintenance and battery testing.

**AUTOD051A - Introduction to Automotive Principles - Chassis Systems**

- Answer correctly, selected questions on the final exam concerning drive line theory, clutch and transmission service and diagnosis.

**AUTOD051B - Applications of Automotive Principles - Chassis Systems**

- Answer correctly, selected questions on the final exam concerning tire service including balancing, disc and drum brake service, and front and rear suspension service.

**AUTOD053A - Automotive Mechanisms**

- Demonstrate the ability to diagram and construct compound mechanical and pneumatic machines, calculating the mechanical advantage for the individual components as well as the complete system.

**AUTOD053B - Automotive Electromechanical Systems**

- Demonstrate the ability to diagram and construct simple electromechanical circuits, calculating and measuring voltage, amperage, and resistance using Ohm's Law and a digital multimeter.
- Develop a testing sequence to diagnose open, shorted, and grounded electromechanical circuits.

**AUTOD057A - Career Research and Employment in the Automotive Industry**

- Participate in an 'in-class' job interview, after studying the various parts of the automotive industry and learning job interview skills.

**AUTOD060. - Automotive Electrical Systems**

- Demonstrate the ability to diagram and construct simple electrical circuits, calculating and measuring voltage, amperage, and resistance using Ohm's Law and a digital multimeter.
- Develop a testing sequence to diagnose inoperative charging, cranking, and battery circuits.

**AUTOD060A - Electrical Schematic Diagnosis**

- Analyze an open circuit problem in which all or part of the circuit is inoperative.

**AUTOD060B - Automotive Electronics**

- Analyze the operation of engine control systems where computer management is prevalent.

**AUTOD060C - Automotive Ignition, Fuel and Emission Systems**

- Identify major ignition and fuel system components.

**AUTOD060D - Ignition Analysis and Oscilloscope Diagnosis**

- Identify the purpose of an automotive ignition system.

**AUTOD060E - Automotive Fuel Injection**

- Describe the principles of electronic fuel injection.

**AUTOD060F - No-Start Diagnosis**

- Identify basic internal combustion principles for the gasoline engine.

**AUTOD060G - Advanced Scan Tool Diagnosis**

- Identify the purpose of an automotive scan tool.

**AUTOD060H - Advanced Drivability and Onboard Diagnostics**

- Describe the onboard self-test and diagnostic capabilities of various manufacturers' vehicle control systems.

**AUTOD060J - Advanced Lab Scope and Waveform Diagnosis**

- Analyze the various designs and applications of the diagnostic oscilloscope and power graphing meter.

**AUTOD060K - Automotive Body Electrical Systems**

- The student will show an understanding of a resistive multiplexed switch circuits operation and diagnosis through a written essay.

#### **AUTOD060N - Hybrid Vehicle Safety and Maintenance**

- Identify the function of an automotive hybrid propulsion system.

#### **AUTOD061A - Automotive Brake Systems**

- Understand proper brake inspection procedures.

#### **AUTOD061B - Electronically Controlled Brake Systems**

- Describe the differences in the two major types of wheel speed sensors used on cars and light trucks as well as how they function, and how to diagnose a failure of the component.

#### **AUTOD062A - Automotive Suspension, Steering and Alignment**

- Understand proper under car inspection procedures.
- Understand proper vehicle wheel alignment procedures.

#### **AUTOD062B - Advanced Wheel Alignment**

- Understand the concepts and be able to diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine necessary action.

#### **AUTOD063. - Automatic Transmissions and Transaxles**

- Show an understanding of how a torque converter works.
- Show an understanding of the inputs to transmission that create both up and downshifts.

#### **AUTOD063A - Advanced Manual Drive Train**

- Understand the workings of a manual transmission clutch assembly.
- Calculate first and second order frequency vibrations for a rear wheel drive propeller shaft.

#### **AUTOD063D - Transmission Diagnostic and Repair Techniques**

- Show an understanding of the operation of transmission solenoids and the corresponding voltage values for diagnostic purposes.

#### **AUTOD064. - Automotive Machining and Engine Repair**

- Student should be able to answer selected questions on the final concerning engine theory, valve events, engine diagnostics, and engine assembly.

#### **AUTOD64HP - High Performance Engine Preparation**

- Student will answer correctly, selected questions on the final exam concerning blueprinting operations, engine theory, camshaft design, parts reliability upgrades. These are areas essential to the understanding of performance engines.

#### **AUTOD065P - Smog Inspector - Level 1 Training**

- Student will be able to answer correctly, selected questions on the final exam concerning Bureau of Automotive Repair rules, regulations, and proper procedures to perform a smog check in the state of CA.

#### **AUTOD065W - Smog Inspector - Level 2 Training**

- Student will be able to answer correctly, selected questions on the final exam concerning repairs to lower Oxides of Nitrogen (Nox) failures and procedures to perform an acceleration simulation mode (ASM) smog inspection using a dynamometer.

#### **AUTOD066. - Automotive Air Conditioning**

- Students will understand proper refrigerant recovery, recycling, and handling procedures.

#### **AUTOD067A - Hybrid Electric Vehicles**

- Identify the function of an automotive hybrid propulsion system.

#### **AUTOD067B - Plug-In Electric Vehicle Technology**

- Demonstrates the ability to safely maintain and service a vehicle that uses a high voltage battery as a fuel source for the main propulsion.

#### **AUTOD067G - Gaseous Fuels**

- Students will interpret the environmental affects gaseous fuel produce and which fuel has the lowest effect on our world. This will be determined with a group of questions on the final exam.

#### **AUTOD067J - Introduction to Automotive and Light Truck Diesel Systems**

- Demonstrate the ability to understand diesel theory.
- Develop a testing system to systematically trouble shoot diesel fuel systems.

**AUTOD069Y - Smog Check Update**

- Student will be able to answer correctly, selected questions on the final exam concerning CA Bureau of Automotive Repair smog inspection rules, regulations and procedures updates.

**AUTOD091A - Automotive Brake Systems**

- Given a vehicle and tools, you are to remove one dual servo brake assembly from the vehicle, inspect and lubricate the brake assembly as needed, and reinstall the dual servo brake assembly in the vehicle, according to recognized industry standards in 30 minutes.
- Given a vehicle and tools, you are to remove one tire, wheel, and brake caliper assembly from the vehicle, turn one rotor on the car as needed, and reinstall the tire, wheel, and brake caliper assembly on the vehicle, according to recognized industry standards.
- Given a brake drum and tools, you are to setup the brake drum on the bench lathe, measure and turn the drum as needed according to recognized industry standards in 30 minutes.
- Given a vehicle and tools, you are to perform a complete brake inspection, according to recognized industry standards in 30 minutes.

**AUTOD092A - Automotive Steering and Suspension**

- Given a vehicle and tools, you are to remove the strut assembly from the vehicle, remove and replace the strut from the coil spring, and reinstall the strut assembly in the vehicle, according to recognized industry standards in 30 minutes.
- Given a vehicle and tools, you are to perform a chassis inspection on a front wheel drive vehicle according to recognized industry standards in 30 minutes.
- Given a vehicle and tools, you are to perform a chassis inspection on a rear wheel drive vehicle according to recognized industry standards in 30 minutes.
- Given a vehicle and tools, you are to remove, mount and balance, and reinstall two tire and wheel assemblies, according to recognized industry standards in 30 minutes.

**AUTOD092B - Automotive Alignment**

- Given a vehicle and tools, you are to hook up the John Bean Alignment Machine to the vehicle, obtain alignment readings, determine corrective action, set front toe, and disconnect the alignment equipment, according to recognized industry standards in 30 minutes.
- Given a vehicle and tools, you are to hook up the Hunter Alignment Machine to the vehicle, obtain alignment readings, determine corrective action, set front toe, and disconnect the alignment equipment, according to recognized industry standards in 30 minutes.

**AUTOD092C - Automotive Electronic Chassis Controls**

- The learner will be able to test and diagnose components of electronically controlled suspension systems using a scan tool; determine necessary action.

**AUTOD093A - Automotive Final Drive Train**

- Demonstrate the ability to measure the critical elements of a selected differential, analyze the readings, make the necessary adjustments as well as the skill to disassemble and reassemble the unit.

**AUTOD093B - Standard Transaxles**

- Show their understanding of the powerflow through a standard transaxle.

**AUTOD093C - Automatic Transmissions**

- Describe in an essay form, the function of an automatic transmission torque converter. They must show a knowledge of the components and their function as well as an understanding of the relationship between them. A description of what each component does during acceleration, cruise, and converter lock up must be included.
- Disassemble an automatic transmission and then reassemble the same unit replacing any needed parts.

**AUTOD093D - Automatic Transaxles**

- Show an understanding of how a torque converter works.
- Show an understanding of the inputs to transmission that create both up and downshifts.

**AUTOD093E - Diagnostic Techniques**

- Retrieve a transmission related fault code from the on board computer system and determine a course of action to institute a repair.

**AUTOD093F - Automotive Transmission Service**

- Perform a transmission service as required by factory maintenance schedule.

**AUTOD094A - Principles of Four Stroke Cycle Gas and Diesel Engines**

- After studying the theory of a 4-stroke cycle, internal combustion engine, the student will be able to explain in detail each of the four strokes, valve overlap, and blowdown. This will be done using a cut-away engine.

**AUTOD094B - Automotive Machining and Engine Service**

- Student will set up and grind a valve face with the proper surface finish, while maintaining a margin thickness of no less than 1/16".

**AUTOD094C - Automotive Machining and Engine Service**

- Student will set up and hone a cylinder to a specified size, with the proper surface finish depending on the type of piston rings being used.

**AUTOD094D - Automotive Machining and Engine Service**

- Student will equalize the weight of the rotating ends and reciprocating ends of connecting rods within 1 gram of each other.

**AUTOD094E - Automotive Machining and Engine Service**

- Student will prepare a written estimate for a vehicle repair including all pertinent customer information on the repair order.

**AUTOD094F - Automotive Machining and Engine Service**

- Student will prepare a detailed checklist for an engine being assembled, including assembly of all subsystems.

**AUTOD099A - Automotive Electricity, Battery and Cranking Systems**

- The student will demonstrate the ability to perform a battery load test, a starter draw test, a charging system test and analyze the readings.

**AUTOD099B - Automotive Charging, Ignition and Accessory Systems**

- The student will demonstrate the ability to repair a copper strand wire, perform a parasitic draw test, and measure the resistance of various components.

**AUTOD099C - Introduction to Engine Performance Systems**

- The student will be able to demonstrate the ability to properly install a distributor into an engine, install spark plug wires in the proper firing order and set ignition timing to specifications.

**AUTOD099D - Intermediate Engine Performance Systems**

- The student will be able to examine a vehicle with a no-start condition, and using analytical skills learned in class, be able to deduce the malfunctioning component(s) within 15 minutes.

**AUTOD099E - Basic Engine Performance Diagnostic Procedures**

- The student will be able to demonstrate how to properly retrieve DTC's from a Powertrain Control Module (PCM), retrieve Freeze Frame Data from a PCM, and retrieve Inspection/Maintenance (I/M) Readiness Status from a PCM.

**AUTOD099F - Intermediate Engine Performance Diagnostic Procedures**

- The student will be able to perform a Smog Inspection (Acceleration Simulation Mode), a visual inspection and functional inspection per CA State guidelines.

**AUTOD350A - Introduction to Automotive Principles**

- Answer correctly, selected questions on the final exam concerning engine theory, lubrication, and basic electrical fundamentals.

**AUTOD350B - Applied Automotive Principles**

- Answer correctly, selected questions on the final exam concerning engine service, cooling system maintenance and battery testing.

**AUTOD351A - Introduction to Automotive Principles - Chassis Systems**

- Answer correctly, selected questions on the final exam concerning drive line theory, clutch and transmission service and diagnosis.

**AUTOD351B - Applications of Automotive Principles - Chassis Systems**

- Answer correctly, selected questions on the final exam concerning tire service including balancing, disc and drum brake service, and front and rear suspension service.

**AUTOD353A - Automotive Mechanisms**

- Demonstrate the ability to diagram and construct compound mechanical and pneumatic machines, calculating the mechanical advantage for the individual components as well as the complete system.

**AUTOD357A - Career Research and Employment in the Automotive Industry**

- Participate in an 'in-class' job interview, after studying the various parts of the automotive industry and learning job interview skills.

**AUTOD360. - Automotive Electrical Systems**

- Demonstrate the ability to diagram and construct simple electrical circuits, calculating and measuring voltage, amperage, and resistance using Ohm's Law and a digital multimeter.
- Develop a testing sequence to diagnose inoperative charging, cranking, and battery circuits.

**AUTOD360A - Electrical Schematic Diagnosis**

- Analyze an open circuit problem in which all or part of the circuit is inoperative.

**AUTOD360B - Automotive Electronics**

- Analyze the operation of engine control systems where computer management is prevalent.

#### **AUTOD360C - Automotive Ignition, Fuel and Emission Systems**

- Identify major ignition and fuel system components.

#### **AUTOD360D - Ignition Analysis and Oscilloscope Diagnosis**

- Identify the purpose of an automotive ignition system.

#### **AUTOD360E - Automotive Fuel Injection**

- Describe the principles of electronic fuel injection.

#### **AUTOD360F - No-Start Diagnosis**

- Identify basic internal combustion principles for the gasoline engine.

#### **AUTOD360G - Advanced Scan Tool Diagnosis**

- Identify the purpose of an automotive scan tool.

#### **AUTOD360H - Advanced Drivability and Onboard Diagnostics**

- Describe the onboard self-test and diagnostic capabilities of various manufacturers' vehicle control systems.

#### **AUTOD360J - Advanced Lab Scope and Waveform Diagnosis**

- Analyze the various designs and applications of the diagnostic oscilloscope and power graphing meter.

#### **AUTOD360K - Automotive Body Electrical Systems**

- The student will show an understanding of a resistive multiplexed switch circuits operation and diagnosis through a written essay.

#### **AUTOD360N - Hybrid Vehicle Safety and Maintenance**

- Identify the function of an automotive hybrid propulsion system.

#### **AUTOD361A - Automotive Brake Systems**

- Understand proper brake inspection procedures.

#### **AUTOD361B - Electronically Controlled Brake Systems**

- Describe the differences in the two major types of wheel speed sensors used on cars and light trucks as well as how they function, and how to diagnose a failure of the component.

#### **AUTOD362A - Automotive Suspension, Steering and Alignment**

- Understand proper under car inspection procedures.
- Understand proper vehicle wheel alignment procedures.

#### **AUTOD362B - Advanced Wheel Alignment**

- Understand the concepts and be able to diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine necessary action.

#### **AUTOD363. - Automatic Transmissions and Transaxles**

- Show an understanding of how a torque converter works.
- Show an understanding of the inputs to transmission that create both up and downshifts.

#### **AUTOD363A - Advanced Manual Drive Train**

- Show an understanding of how a torque converter works.
- Show an understanding of the inputs to transmission that create both up and downshifts.

#### **AUTOD363D - Transmission Diagnostic and Repair Techniques**

- Show an understanding of the operation of transmission solenoids and the corresponding voltage values for diagnostic purposes.

#### **AUTOD364. - Automotive Machining and Engine Repair**

- Student should be able to answer selected questions on the final concerning engine theory, valve events, engine diagnostics, and engine assembly.

#### **AUTOD364H - High Performance Engine Preparation**

- Student will answer correctly, selected questions on the final exam concerning blueprinting operations, engine theory, camshaft design, parts reliability upgrades. These are areas essential to the understanding of performance engines.

#### **AUTOD365P - Smog Inspector - Level 1 Training**

- Student will be able to answer correctly, selected questions on the final exam concerning Bureau of Automotive Repair rules, regulations, and proper procedures to perform a smog check in the state of CA.

#### **AUTOD365W - Smog Inspector - Level 2 Training**

- Student will be able to answer correctly, selected questions on the final exam concerning repairs to lower Oxides of Nitrogen (Nox) failures and procedures to perform an acceleration simulation mode (ASM) smog inspection using a dynamometer.

#### **AUTOD366. - Automotive Air Conditioning**

- Students will understand proper refrigerant recovery, recycling, and handling procedures.

#### **AUTOD367A - Hybrid Electric Vehicles**

- Identify the function of an automotive hybrid propulsion system.

#### **AUTOD367B - Plug-In Electric Vehicle Technology**

- Demonstrates the ability to safely maintain and service a vehicle that uses a high voltage battery as a fuel source for the main propulsion.

#### **AUTOD367G - Gaseous Fuels**

- Students will interpret the environmental affects gaseous fuel produce and which fuel has the lowest effect on our world. This will be determined with a group of questions on the final exam.

#### **AUTOD367J - Introduction to Automotive and Light Truck Diesel Systems**

- Demonstrate the ability to understand diesel theory.
- Develop a testing system to systematically trouble shoot diesel fuel systems.

### **DMT - Design and Mfg. Tech.**

#### **CSLO**

#### **DMTD052. - Geometric Dimensioning and Tolerancing: CAD Applications**

- Create a document package containing components modeled using CAD design tools in accordance with ASME standards and engineering drawings compliant with ASME Y14.5.

#### **DMTD053. - 3D Printing, Reverse Engineering and Rapid Prototyping: Strategies in Industry**

- Students who complete this course will be able to apply their knowledge of 3D Printing (AM) to analyze, compare, explain and utilize the various processes to prototyping and fabricate new mechanical designs and tools for industry.

#### **DMTD054. - 3D Printing/Additive Manufacturing: Theory and Practice**

- Apply knowledge of advanced Additive Manufacturing/3D Printing to analyze, compare, explain and utilize the primary production processes for prototyping and fabricating new mechanical designs and tools for industry implementation.

#### **DMTD055. - Survey of Design and Manufacturing Processes/Modern Fabrication**

- Students will have a knowledge of manufacturing processes and the skills to develop and manipulate the operating parameters for a given design process.

#### **DMTD056. - 3D Printing for AM Support Technicians and Operators**

- Demonstrate the skills required for each of the different roles (manager, operator, technician) within an Additive Manufacturing facility.

#### **DMTD057. - Design for Additive Manufacturing (DfAM)**

- Apply the specific knowledge of 3D Printing (AM) to analyze, compare, explain and utilize various processes of prototyping and fabrication of mechanical designs to implement DfAM technology based on current industry processes.

#### **DMTD060A - SolidWorks (Introduction)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using SolidWorks.

#### **DMTD060B - SolidWorks (Introduction)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using SolidWorks.

#### **DMTD060C - SolidWorks (Introduction)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using SolidWorks.

#### **DMTD060D - SolidWorks (Introduction)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and

Assemblies, using SolidWorks.

**DMTD060E - SolidWorks (Introduction)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using SolidWorks.

**DMTD061A - SolidWorks (Intermediate)**

- Create & modify "Course-Supplied" intermediate-level Parts and Assemblies, using SolidWorks.

**DMTD061B - SolidWorks (Intermediate)**

- Create & modify "Course-Supplied" intermediate-level Parts and Assemblies, using SolidWorks.

**DMTD061C - SolidWorks (Intermediate)**

- Create & modify "Course-Supplied" intermediate-level Parts and Assemblies, using SolidWorks.

**DMTD061D - SolidWorks (Intermediate)**

- Create & modify "Course-Supplied" intermediate-level Parts and Assemblies, using SolidWorks.

**DMTD061E - SolidWorks (Intermediate)**

- Create & modify "Course-Supplied" intermediate-level Parts and Assemblies, using SolidWorks.

**DMTD062A - SolidWorks: Top-Down Design and Advanced System Tools**

- Create and edit/maintain large & complex SolidWorks Assemblies using Advanced 3D Solid Modeling techniques & methods.

**DMTD062B - SolidWorks: Top-Down Design and Advanced System Tools**

- Create and edit/maintain large & complex SolidWorks Assemblies using Advanced 3D Solid Modeling techniques & methods.

**DMTD062C - SolidWorks: Top-Down Design and Advanced System Tools**

- Create and edit/maintain large & complex SolidWorks Assemblies using Advanced 3D Solid Modeling techniques & methods.

**DMTD062D - SolidWorks: Top-Down Design and Advanced System Tools**

- Create and edit/maintain large & complex SolidWorks Assemblies using Advanced 3D Solid Modeling techniques & methods.

**DMTD062E - SolidWorks: Top-Down Design and Advanced System Tools**

- Create and edit/maintain large & complex SolidWorks Assemblies using Advanced 3D Solid Modeling techniques & methods.

**DMTD063A - SolidWorks: Surface Modeling**

- Create and edit/manipulate complex SolidWorks Surfacing design using Advanced 3D Surfacing Modeling techniques & methods.

**DMTD063B - SolidWorks: Surface Modeling**

- Create and edit/manipulate complex SolidWorks Surfacing design using Advanced 3D Surfacing Modeling techniques & methods.

**DMTD063C - SolidWorks: Surface Modeling**

- Create and edit/manipulate complex SolidWorks Surfacing design using Advanced 3D Surfacing Modeling techniques & methods.

**DMTD063D - SolidWorks: Surface Modeling**

- Create and edit/manipulate complex SolidWorks Surfacing design using Advanced 3D Surfacing Modeling techniques & methods.

**DMTD063E - SolidWorks: Surface Modeling**

- Create and edit/manipulate complex SolidWorks Surfacing design using Advanced 3D Surfacing Modeling techniques & methods.

**DMTD064A - SolidWorks Simulation (Finite Element Analysis)**

- Utilize and manipulate complex industry design analysis tools through simulating responses to structural and thermal loads using SolidWorks Simulation with Finite Element Analysis techniques & methodologies.

**DMTD064B - SolidWorks Simulation (Finite Element Analysis)**

- Utilize and manipulate complex industry design analysis tools through simulating responses to structural and thermal loads using SolidWorks Simulation with Finite Element Analysis techniques & methodologies.

**DMTD064C - SolidWorks Simulation (Finite Element Analysis)**

- Utilize and manipulate complex industry design analysis tools through simulating responses to structural and thermal loads using SolidWorks Simulation with Finite Element Analysis techniques & methodologies.

**DMTD064D - SolidWorks Simulation (Finite Element Analysis)**

- Utilize and manipulate complex industry design analysis tools through simulating responses to structural and thermal loads using

SolidWorks Simulation with Finite Element Analysis techniques & methodologies.

#### **DMTD064E - SolidWorks Simulation (Finite Element Analysis)**

- Utilize and manipulate complex industry design analysis tools through simulating responses to structural and thermal loads using SolidWorks Simulation with Finite Element Analysis techniques & methodologies.

#### **DMTD065A - Creo Parametric (Introduction)**

- Create an entry-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD065B - Creo Parametric (Introduction)**

- Create an entry-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD065C - Creo Parametric (Introduction)**

- Create an entry-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD065D - Creo Parametric (Introduction)**

- Create an entry-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD065E - Creo Parametric (Introduction)**

- Create an entry-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD066A - Creo Parametric (Intermediate)**

- Create an intermediate-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD066B - Creo Parametric (Intermediate)**

- Create an intermediate-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD066C - Creo Parametric (Intermediate)**

- Create an intermediate-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD066D - Creo Parametric (Intermediate)**

- Create an intermediate-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD066E - Creo Parametric (Intermediate)**

- Create an intermediate-level Document Package which includes Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo Parametric.

#### **DMTD067A - Creo Parametric: Top-Down Design and Advanced System Tools**

- Functioning as a designer using Creo Parametric, the student will create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings for components and assemblies.

#### **DMTD067B - Creo Parametric: Top-Down Design and Advanced System Tools**

- Functioning as a designer using Creo Parametric, the student will create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings for components and assemblies.

#### **DMTD067C - Creo Parametric: Top-Down Design and Advanced System Tools**

- Functioning as a designer using Creo Parametric, the student will create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings for components and assemblies.

#### **DMTD067D - Creo Parametric: Top-Down Design and Advanced System Tools**

- Functioning as a designer using Creo Parametric, the student will create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings for components and assemblies.

#### **DMTD067E - Creo Parametric: Top-Down Design and Advanced System Tools**

- Functioning as a designer using Creo Parametric, the student will create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings for components and assemblies.

**DMTD068A - Creo Parametric Surface Modeling**

- Create and edit complex Creo Parametric Surfacing design using Advanced 3D Surfacing and Interactive Surface Design Extension (ISDX) Modeling techniques & methodologies.

**DMTD068B - Creo Parametric Surface Modeling**

- Create and edit complex Creo Parametric Surfacing design using Advanced 3D Surfacing and Interactive Surface Design Extension (ISDX) Modeling techniques & methodologies.

**DMTD068C - Creo Parametric Surface Modeling**

- Create and edit complex Creo Parametric Surfacing design using Advanced 3D Surfacing and Interactive Surface Design Extension (ISDX) Modeling techniques & methodologies.

**DMTD068D - Creo Parametric Surface Modeling**

- Create and edit complex Creo Parametric Surfacing design using Advanced 3D Surfacing and Interactive Surface Design Extension (ISDX) Modeling techniques & methodologies.

**DMTD068E - Creo Parametric Surface Modeling**

- Create and edit complex Creo Parametric Surfacing design using Advanced 3D Surfacing and Interactive Surface Design Extension (ISDX) Modeling techniques & methodologies.

**DMTD070A - Introduction to Computer Aided Design Using AutoCAD**

- Create an entry level Document Package which includes (as assigned) Solid Parts, Assemblies and Basic Drawings for Parts and Assemblies, using AutoCAD.

**DMTD070B - Introduction to Computer Aided Design Using AutoCAD**

- Create an entry level Document Package which includes (as assigned) Solid Parts, Assemblies and Basic Drawings for Parts and Assemblies, using AutoCAD.

**DMTD070C - Introduction to Computer Aided Design Using AutoCAD**

- Create an entry level Document Package which includes (as assigned) Solid Parts, Assemblies and Basic Drawings for Parts and Assemblies, using AutoCAD.

**DMTD070D - Introduction to Computer Aided Design Using AutoCAD**

- Create an entry level Document Package which includes (as assigned) Solid Parts, Assemblies and Basic Drawings for Parts and Assemblies, using AutoCAD.

**DMTD070E - Introduction to Computer Aided Design Using AutoCAD**

- Create an entry level Document Package which includes (as assigned) Solid Parts, Assemblies and Basic Drawings for Parts and Assemblies, using AutoCAD.

**DMTD073A - Introduction to Computer Aided Design Using Autodesk Inventor**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using AutoDesk Inventor.

**DMTD073B - Introduction to Computer Aided Design Using Autodesk Inventor**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using AutoDesk Inventor.

**DMTD073C - Introduction to Computer Aided Design Using Autodesk Inventor**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using AutoDesk Inventor.

**DMTD073D - Introduction to Computer Aided Design Using Autodesk Inventor**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using AutoDesk Inventor.

**DMTD073E - Introduction to Computer Aided Design Using Autodesk Inventor**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using AutoDesk Inventor.

**DMTD075A - Introduction to Computer Aided Design Using Siemens NX**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Siemens NX.

**DMTD075B - Introduction to Computer Aided Design Using Siemens NX**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Siemens NX.

**DMTD075C - Introduction to Computer Aided Design Using Siemens NX**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Siemens NX.

**DMTD075D - Introduction to Computer Aided Design Using Siemens NX**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Siemens NX.

**DMTD075E - Introduction to Computer Aided Design Using Siemens NX**

- Create an entry-level Design Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Siemens NX.

**DMTD077A - Special Projects in Manufacturing and CNC/Mastercam Certification Level 1**

- Complete advanced project or projects utilizing skills learned in basic CAD/CAM programming.

**DMTD077B - Special Projects in Manufacturing and CNC/Mastercam Certification Level 2**

- Complete advanced project or projects utilizing skills learned in surface contouring CAD/CAM programming.

**DMTD077C - Special Projects in Manufacturing and CNC/Mastercam Certification Level 3**

- Complete advanced project or projects utilizing skills learned in Lathe and Multi Axis CAD/CAM programming.

**DMTD077D - Special Projects In Manufacturing and CNC/NIMS Level 1**

- Complete advanced project or projects utilizing skills learned in entry level DMT courses.

**DMTD077E - Special Projects In Manufacturing and CNC/NIMS Level 2**

- Complete advanced project or projects utilizing skills learned in intermediate DMT courses.

**DMTD077F - Special Projects In Manufacturing and CNC/NIMS Level 3**

- Complete advanced project or projects utilizing skills learned in advanced DMT courses.

**DMTD077G - Special Projects in 3D Printing/Additive Manufacturing**

- Complete advanced project or projects utilizing skills learned in advanced DMT courses.

**DMTD077H - Special Projects for Additive Manufacturing in the Digital Factories**

- Complete advanced project or projects utilizing skills learned in advanced DMT courses.

**DMTD077J - Special Projects in Additive Manufacturing for Rapid Prototyping**

- Complete advanced project or projects utilizing skills learned in advanced DMT courses.

**DMTD077X - Special Projects in CAD**

- Create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings.

**DMTD077Y - Special Projects in CAD**

- Create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings.

**DMTD077Z - Special Projects in CAD**

- Create an engineering document package which complies with industry-defined standards and shall include the following; components modeled using CAD design tools, assemblies generated from multiple components and engineering drawings.

**DMTD080. - Introduction to Machining and CNC Processes**

- Analyze, construct, and inspect assigned machined projects using the introductory principles of machining.
- Operate machines and equipment safely.

**DMTD082. - Advanced Conventional Machine Tools, Tool Design, Abrasive Machining**

- Analyze, construct, and inspect assigned machined projects using advanced principles of machining.
- Demonstrate safe operation of specialized machining equipment to construct advanced assemblies.

**DMTD084A - Introduction to CNC Programming and Operation; Mill**

- Demonstrate the set up and basic operation of vertical machining centers.
- Create basic word-address programs to successfully construct projects using vertical machining centers.

**DMTD084B - CNC Programming and Operation; Intermediate Mill**

- Demonstrate the set up and advanced operation of vertical machining centers.

- Create advanced word-address programs to successfully construct projects using vertical machining centers.

#### **DMTD084C - CNC Lathes-Horizontal Mill-4th Axis Rotary-Programming Operations**

- Demonstrate the set up and operation of lathes, horizontal machining centers, and rotary axis.
- Create word-address programs to successfully construct projects using lathes, horizontal machining centers, and rotary axis.

#### **DMTD087A - CAD/CAM Programming Using Mastercam**

- Construct basic part geometry using Mastercam.
- Produce tool paths from basic part geometry to create word address programs.

#### **DMTD087B - CAD/CAM Programming Using Mastercam**

- Construct basic part geometry using Mastercam.
- Produce tool paths from basic part geometry to create word address programs.

#### **DMTD087D - CAD/CAM Programming Using Mastercam**

- Construct basic part geometry using Mastercam.
- Produce tool paths from basic part geometry to create word address programs.

#### **DMTD087E - CAD/CAM Programming Using Mastercam**

- Construct basic part geometry using Mastercam.
- Produce tool paths from basic part geometry to create word address programs.

#### **DMTD087F - CAD/CAM Based CNC Surface Contouring Programming Using Mastercam**

- Construct advanced surface geometry using Mastercam.
- Produce tool paths from advanced surface geometry to create word address programs.

#### **DMTD087G - CAD/CAM Based CNC Surface Contouring Programming Using Mastercam**

- Construct advanced surface geometry using Mastercam.
- Produce tool paths from advanced surface geometry to create word address programs.

#### **DMTD087H - CAD/CAM Based CNC Surface Contouring Programming Using Mastercam**

- Construct advanced surface geometry using Mastercam.
- Produce tool paths from advanced surface geometry to create word address programs.

#### **DMTD087J - CAD/CAM Based CNC Surface Contouring Programming Using Mastercam**

- Construct advanced surface geometry using Mastercam.
- Produce tool paths from advanced surface geometry to create word address programs.

#### **DMTD087K - CAD/CAM Based CNC Surface Contouring Programming Using Mastercam**

- Construct advanced surface geometry using Mastercam.
- Produce tool paths from advanced surface geometry to create word address programs.

#### **DMTD087L - CAD/CAM Based CNC 4 and 5 Axis Mill/Lathe Programming Using Mastercam**

- Construct and import advanced part geometry using Mastercam.
- Produce tool paths from advanced part geometry to create word address programs for lathes and multi-axis machining centers.

#### **DMTD087M - CAD/CAM Based CNC 4 and 5 Axis Mill/Lathe Programming Using Mastercam**

- Construct and import advanced part geometry using Mastercam.
- Produce tool paths from advanced part geometry to create word address programs for lathes and multi-axis machining centers.

#### **DMTD087N - CAD/CAM Based CNC 4 and 5 Axis Mill/Lathe Programming Using Mastercam**

- Construct and import advanced part geometry using Mastercam.
- Produce tool paths from advanced part geometry to create word address programs for lathes and multi-axis machining centers.

#### **DMTD087P - CAD/CAM Based CNC 4 and 5 Axis Mill/Lathe Programming Using Mastercam**

- Construct and import advanced part geometry using Mastercam.

- Produce tool paths from advanced part geometry to create word address programs for lathes and multi-axis machining centers.

#### **DMTD087Q - CAD/CAM Based CNC 4 and 5 Axis Mill/Lathe Programming Using Mastercam**

- Construct and import advanced part geometry using Mastercam.
- Produce tool paths from advanced part geometry to create word address programs for lathes and multi-axis machining centers.

#### **DMTD089A - CAM Based CNC Multi-Axis Programming Using NX**

- Produce tool paths from advanced surface geometry to create word address programs.
- Produce tool paths from advanced part geometry to create word address programs for multi-axis machining centers.

#### **DMTD089B - CAM Based CNC Multi-Axis Programming Using NX**

- Produce tool paths from advanced surface geometry to create word address programs.
- Produce tool paths from advanced part geometry to create word address programs for multi-axis machining centers.

#### **DMTD089C - CAM Based CNC Multi-Axis Programming Using NX**

- Produce tool paths from advanced surface geometry to create word address programs.
- Produce tool paths from advanced part geometry to create word address programs for multi-axis machining centers.

#### **DMTD089D - CAM Based CNC Multi-Axis Programming Using NX**

- Produce tool paths from advanced surface geometry to create word address programs.
- Produce tool paths from advanced part geometry to create word address programs for multi-axis machining centers.

#### **DMTD089E - CAM Based CNC Multi-Axis Programming Using NX**

- Produce tool paths from advanced surface geometry to create word address programs.
- Produce tool paths from advanced part geometry to create word address programs for multi-axis machining centers.

#### **DMTD090. - Print Reading and Machine Shop Calculations**

- Demonstrate the ability to interpret multi-view drawings and prints.
- Demonstrate the ability to solve common calculations found in machine shop applications.

#### **DMTD091. - Dimensional Metrology**

- Demonstrate the ability to utilize common gauges, measurement instruments, and calibration tools.
- Demonstrate the applications of precision measurement instruments.

#### **DMTD092. - Applied GD&T (ASME Y14.5m); Coordinate Measuring Machines (CMM)**

- Apply geometric dimensioning and tolerancing standards to interpret drawings and inspect manufactured parts.
- Demonstrate basic operation of the coordinate measuring machine to inspect manufactured parts.

#### **DMTD093. - Introduction to Quality Assurance**

- Demonstrate an understanding of quality assurance objectives, methods, and processes.
- Demonstrate a working knowledge of calibration systems, inspection methodology, statistical process control indices, and quality sampling techniques.
- Explain quality improvement concepts and a working knowledge of continuous improvement programs.

#### **DMTD095. - Manufacturing Materials and Processes**

- Conduct material property analysis to determine appropriate material selection and use.
- Analyze, compare, and explain manufacturing processes such as molding, forming, forging and casting.

#### **DMTD101. - CAD Technology Laboratory Creo Parametric (Beginning)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using Creo.

#### **DMTD102. - CAD Technology Laboratory SolidWorks (Beginning)**

- Create an entry-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Basic Drawings for Parts and Assemblies, using SolidWorks.

#### **DMTD103. - CAD Technology Laboratory Creo Parametric (Intermediate)**

- Create an intermediate-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Drawings for Parts and Assemblies, using Creo.

**DMTD104. - CAD Technology Laboratory SolidWorks (Intermediate)**

- Create an intermediate Document Package which includes (as assigned) Solid Parts, Assemblies, and Drawings for Parts and Assemblies, using SolidWorks.

**DMTD105. - CAD Technology Laboratory Creo Parametric (Advanced)**

- Create an advanced-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Drawings for Parts and Assemblies, using SolidWorks.

**DMTD106. - CAD Technology Laboratory SolidWorks (Advanced)**

- Create an advanced-level Document Package which includes (as assigned) Solid Parts, Assemblies, and Drawings for Parts and Assemblies, using SolidWorks.

**DMTD107. - CAD Technology Laboratory Creo Parametric (Surfaces)**

- Create an engineering document package which complies with industry-defined standards and shall include the following: components modeled using CAD design tools; assemblies generated from multiple components; engineering drawings for components and assemblies.

**DMTD108. - CAD Technology Laboratory SolidWorks (Surfaces)**

- Create an engineering document package which complies with industry-defined standards and shall include the following: components modeled using CAD design tools; assemblies generated from multiple components; engineering drawings for components and assemblies.

**DMTD109. - CAD Technology Laboratory Creo Parametric (Sheetmetal)**

- Create an engineering document package which complies with industry-defined standards and shall include the following: components modeled using CAD design tools; assemblies generated from multiple components; engineering drawings for components and assemblies.

**DMTD110. - CAD Technology Laboratory Geometric Dimensioning and Tolerancing**

- Create an engineering document package which complies with industry-defined standards and shall include the following: components modeled using CAD design tools; assemblies generated from multiple components; engineering drawings for components and assemblies.

**DMTD201. - Manufacturing and CNC Technology Laboratory/Conventional Machining 1**

- Complete assignments and practice skills from co-requisite DMT class.

**DMTD202. - Manufacturing and CNC Technology Laboratory/CNC Machining 1**

- Complete assignments and practice skills from co-requisite DMT class.

**DMTD203. - Manufacturing and CNC Technology Laboratory/CNC Machining 2**

- Complete assignments and practice skills from co-requisite DMT class.

**DMTD204. - Manufacturing and CNC Technology Laboratory/CNC Machining 3**

- Complete assignments and practice skills from co-requisite DMT class.

**DMTD205. - Manufacturing and CNC Technology Laboratory/CAD CAM Programming 1**

- Complete assignments and practice skills from co-requisite DMT class.

**Business/Computer Science****ACCT - Accounting****CSLO****ACCTD001A - Financial Accounting I**

- Demonstrate a knowledge of double entry accounting for business transactions and adjustments and prepare, explain and analyze financial statements using GAAP.
- Analyze fundamental business concepts, how businesses operate, how accounting serves them and identify ethical issues in an accounting context.

**ACCTD01AH - Financial Accounting I - HONORS**

- Demonstrate a knowledge of double entry accounting for business transactions and adjustments and prepare, explain and analyze financial statements using GAAP.
- Analyze fundamental business concepts, how businesses operate, how accounting serves them and identify ethical issues in an accounting context.

**ACCTD001B - Financial Accounting II**

- Demonstrate a knowledge of the users of accounting information and forms or business ownership, risks and capitalization of each and prepare, analyze and evaluate the financial structure of a firm using corporate financial statements (and include the statement of cash flows).

- Analyze and evaluate the capitalization of a firm using debt and equity and apply net present value methodology to the analysis.

### ACCTD01BH - Financial Accounting II - HONORS

- Demonstrate a knowledge of the users of accounting information and forms or business ownership, risks and capitalization of each and prepare, analyze and evaluate the financial structure of a firm using corporate financial statements (and include the statement of cash flows).

- Analyze and evaluate the capitalization of a firm using debt and equity and apply net present value methodology to the analysis.

### ACCTD001C - Managerial Accounting

- Identify elements of cost for a business and explain and analyze how costs are allocated and assessed for various users. Compare and contrast the cost acct system for a manufacturer, merchandiser and service firm and distinguish the differences and similarities between financial reporting and cost accounting and utilize npv and irr for evaluating the financial viability of a business decision.

### ACCTD01CH - Managerial Accounting - HONORS

- Identify elements of cost for a business and explain and analyze how costs are allocated and assessed for various users. Compare and contrast the cost acct system for a manufacturer, merchandiser and service firm and distinguish the differences and similarities between financial reporting and cost accounting and utilize npv and irr for evaluating the financial viability of a business decision.

### ACCTD051A - Intermediate Accounting

- Assess in a comprehensive manner the conceptual foundations and rationale that underlie accounting applications and critique the effects of transactions and events on an entity's financial condition.

### ACCTD051B - Intermediate Accounting

- Demonstrate the ability to apply professional knowledge of the role of accountants in providing and ensuring the integrity of financial and other information relating to the equity and/or debt capitalization of a company.

### ACCTD052. - Advanced Accounting

- Demonstrate knowledge of business combinations; prepare, explain and analyze consolidating workpapers and financial statements.
- Demonstrate knowledge of governmental, not-for-profit, and partnership accounting; and demonstrate an ability to properly record related transactions and prepare related financial statements.

### ACCTD058. - Auditing

- List the 10 GAASs (Generally Accepted Auditing Standards) and explain how and why they are followed.
- Demonstrate knowledge of how GAAS are integrated throughout the financial audit examination process.
- Demonstrate knowledge of a systematic audit approach using the three major underlying and interlinked concepts: audit risk, audit materiality, and audit evidence.

### ACCTD064. - Payroll and Business Tax Accounting

- Research payroll tax laws and evaluate accounting options to comply with these laws.
- Produce payroll tax reports and related journal entries.

### ACCTD066. - Cost Accounting

- Identify, describe, and explain the way managers use cost accounting information to create value, to make decisions, and to evaluate performance in organizations and identify current trends in cost accounting and how they affect organizational decisions.
- Define basic cost behaviors and explain how material, labor, and overhead costs are applied to a product at each stage of the production process and explain the concept of activity-based cost management and demonstrate its use for operational decisions.

### ACCTD067. - Individual Income Taxation

- Demonstrate knowledge of how to assess and evaluate information required to file a federal and state tax return and be able to prepare and analyze an individual income tax return from various income sources, adjustments to income, itemized deductions and tax credits.

### ACCTD068. - Advanced Tax Accounting

- Explain, differentiate, analyze and evaluate the differences between the taxation of individuals, partnerships, corporations and trusts and prepare and analyze a corporate, partnership, trust and gift tax federal return.

### ACCTD073. - Fraud Detection and Deterrence

- Demonstrate competency in critical thinking by deconstructing various frauds to determine how the frauds could be perpetrated, detected, and mitigated.

### ACCTD074. - Accounting Ethics

- Demonstrate competency in identifying, assessing and interpreting ethical issues in accounting and explain the costs and risks of unethical practices in business from the point of view of all relevant stakeholders.

**ACCTD075. - Accounting for Government and Nonprofit Entities**

- Demonstrate knowledge of the accounting cycle from transactions through financial statement preparation and analysis for governmental and nonprofit organizations.

**ACCTD87AH - Computerized Accounting Programs I (Peachtree - Windows)**

- Demonstrate an understanding of accounting and use an existing accounting software program to enter transactions and complete the accounting cycle.

**ACCTD87AI - Computerized Accounting Programs I (Quickbooks)**

- Demonstrate an understanding of accounting and use an existing accounting software program to enter transactions and complete the accounting cycle.

**ACCTD87AJ - Computerized Accounting Programs I (Microsoft Dynamics GP)**

- Demonstrate an understanding of accounting and use an existing accounting software program to enter transactions and complete the accounting cycle.

**ACCTD088. - Excel Spreadsheets for Accounting**

- Evaluate accounting problems; then design and construct Excel spreadsheets to solve those problems.

**ACCTD105. - Basic Financial Accounting Procedures**

- Analyze basic business transactions and record them using double-entry accounting by journalizing, posting entries to the general ledger and preparing relevant internal and external financial statements to include the evaluation of merchandising transactions using perpetual and periodic inventory systems and incorporating various cost flow methods.

**BUS - Business****CSLO****BUSD010. - Introduction to Business**

- Distinguish among the primary functions within a business, such as, marketing, operations, human resources, accounting and finance, and identify the interests and roles of key business stakeholders, such as employees, management, owners, and society.
- Demonstrate a working vocabulary of business terms.

**BUSD018. - Business Law I**

- Demonstrate a knowledge of basic legal terminology and basic tort, constitutional, criminal, administrative and contract law.
- Identify ethical issues in a business law context and evaluate factually simple contract issues using basic common law or UCC rules.

**BUSD021. - Business and Society**

- Recognize the essential vocabulary of business ethics, corporate social responsibility, and business lobbying, be able to match that vocabulary with its definitions, and be able to employ that vocabulary correctly in a written composition.
- Discuss and evaluate the meaning of business ethics, the major sources of ethical values in business, business ethics in other cultures, and factors that influence managerial ethics.
- Examine and assess the role of government in regulating business, the history of government regulation of business from the Industrial Revolution to the present, and the influence of business on the political process.

**BUSD050. - Nonprofit Corporations**

- Examine the foundation, requirements, characteristics, and elements of effective functioning of nonprofit organizations.
- Distinguish the roles, interdependence, and impact of a nonprofit governing board as distinct from staff and volunteers.

**BUSD054. - Business Mathematics**

- Demonstrate an understanding of the "Time Value of Money" concept in business.
- Demonstrate a basic knowledge of the mathematics of pricing.
- Calculate performance measures for investments such as stocks, bonds or mutual funds.

**BUSD055. - Introduction to Entrepreneurship**

- Examine the steps required, the support available, and the tactics commonly employed by entrepreneurs starting a business.
- Critically evaluate business plans in terms of feasibility, investment potential, risk, and completeness.

**BUSD056. - Human Relations in the Workplace**

- Apply human relations theories to varied workplace situations and discuss the likely results.
- Describe the impact of employees' human relations skills, ethical choices, attitudes, and physical and mental wellbeing on the success of an organization.

- Make ethical decisions by demonstrating personal and organizational social responsibility.
- Describe the value of diversity in today's workplace.

#### **BUSD057. - Human Resource Management**

- Examine Human Resources (HR) practices and how they affect employee performance, motivation, and the firm.
- Appraise the impact of HR as a strategic partner with corporate executive leadership to achieve competitive advantage in the marketplace.
- Compare HR functions to formulate critical written and oral analysis of current global HR challenges.

#### **BUSD058. - The Business Plan**

- Develop and conduct a feasibility study analysis for a business plan.
- Write a business plan and deliver an effective presentation to potential investors.

#### **BUSD060. - International Business Management**

- Examine a country's economic, political, legal, social and cultural conditions and assess its business risks and opportunities.
- Explain the roles of international trade, foreign investment and the global monetary system.
- Evaluate a global business scenario and determine the best courses of action.

#### **BUSD065. - Leadership**

- Compare, contrast and demonstrate leadership behaviors.
- Distinguish the roles, interaction and impact of the leader, the follower and the situation in the leadership model.

#### **BUSD070. - Principles of E-Commerce**

- Analyze and evaluate e-commerce business models including B2C, B2B, P2P, and others.
- Compare and contrast e-commerce strategies, including social and mobile marketing, payment processing, and security.
- Identify and explain fundamental website tools, including design tools, programming tools, and data processing tools required for the implementation of a successful e-commerce business.

#### **BUSD073. - International Marketing**

- Identify and evaluate the challenges presented by various dimensions of marketing environments in foreign markets.
- Examine and assess global marketing opportunities, and identify appropriate market entry strategies.
- Develop an international marketing strategic plan for a product or service or business using the strategic marketing mix elements of product, distribution, price and promotion.

#### **BUSD085. - Business Communication**

- Describe and apply the principles of written and verbal business communications.
- Develop and use a variety of communication strategies that are effective in different business situations.
- Identify the most effective written and oral communication skills that fit personal communication style and situation.

#### **BUSD087. - Introduction to Selling**

- Identify and describe each of the steps in the seven step selling process model, explain the purpose of each step, and describe the essential elements of successful execution of each step.

#### **BUSD089. - Advertising**

- Relate contemporary advertising to the classic human communication model.
- Distinguish advertising from other elements of integrated marketing communications (IMC) and explain its role in an organization's marketing strategy.
- Identify the major social and economic aspects of advertising in the U.S. and contrast those with the role of advertising in other countries.

#### **BUSD090. - Principles of Marketing**

- Analyze the effectiveness of the marketing mix (product, price, promotion and distribution) for a particular organization.
- Determine appropriate market segments and target markets and explain consumer behavior.
- Identify global forces external to the organization that affect marketing strategies.

#### **BUSD091. - Introduction to Personal Finance**

- Demonstrate a knowledge of opportunity costs and the time value of money.

- Prepare, explain and analyze personal financial statements including the balance sheet and cash flow statement.
- Analyze and evaluate various savings, investment, and insurance options.

#### **BUSD094. - Social Media Marketing Strategies**

- Analyze relationship building with target customers and diverse partners and design a social media plan likely to produce favorable outcomes.
- Examine a wide variety of cost-effective promotion tools.

#### **BUSD096. - Principles of Management**

- Examine the functions of planning, organizing, leading, staffing and controlling.
- Evaluate and anticipate the potential effectiveness of various management styles, communications and decisions for a given situation.

### **CIS - Computer Info. Systems**

#### **CSLO**

#### **CISD002. - Computers and the Internet in Society**

- Analyze the effect of the Internet, computers, and cellular communications on individuals, culture, and society.
- Analyze the effects of the Internet, computers, and cellular communications on institutions, including education, business, economics, and politics.
- Judge the effect of the the Internet and computers on law and ethics.

#### **CISD003. - Business Information Systems**

- Create and execute a plan to improve success factors in a business, using software and hardware.
- Produce a business document utilizing word processing tools to show use of various formatting, such as columns, outline, and numbering.
- Design a model for business decision making utilizing spreadsheet software and incorporating charts, formulas, and formatting.
- Create a presentation about a business technology implementation utilizing presentation software incorporating graphics, tables, process flow diagrams and text.
- Solve a business data problem by utilizing database technology.

#### **CISD004. - Computer Literacy**

- Manipulate data in a spreadsheet.
- Manage file and folder properties in the operating system.
- Extract information from a database program.

#### **CISD005. - Swift Programming**

- Design, code, document, analyze, debug, and test introductory level Swift programs that include Swift kits.
- Code and debug Swift programs using Xcode Playgrounds - Apple's IDE for Swift programming.

#### **CISD009. - Introduction to Data Science**

- Collect, clean, analyze, and visualize data to meet and defend a measured objective.
- Gather data and choose a model to train and tune the machine learning tool and interpret the result.

#### **CISD014A - Visual Basic .NET Programming I**

- Design a graphical user interface in Visual Basic .NET implementing basic controls including text boxes, labels, list boxes, buttons, radio buttons, and checkboxes.
- Design the algorithm, write, document, debug and test the code for event procedures and sub procedures of a Visual Basic application incorporating elementary coding constructs.
- Read, analyze and explain introductory level Visual Basic code.

#### **CISD014B - Visual Basic .NET Programming II**

- Design, create and debug an application incorporating class modules, bas modules and multiple forms.
- Design, create and debug an application creating and updating a dataset from more than one table.

#### **CISD018A - Introduction to Unix/Linux**

- Use the Unix/Linux Operating System utilities and shell features for basic file manipulation, networking, and communication.

### CISD018B - Advanced UNIX/LINUX

- Use the Unix/Linux Operating System utilities, shell features, and regular expressions for advanced text file manipulation.

### CISD018C - Bash Scripting

- Create programs in the Bourne Again, Bourne, Korn, and C shells, that interact with the Unix/Linux operating system.

### CISD21JA - Introduction to x86 Processor Assembly Language and Computer Architecture

- Investigate architectural components and design of microprocessors as well as evaluate and formulate computer and numeric data representation.
- Design, code, document, analyze, debug, and test introductory level assembly programs for the x86 family of processors.

### CISD21JB - Advanced x86 Processor Assembly Programming

- Design, code, document, analyze, debug, and test advanced level assembly programs for the x86 family of processor, including linkage to high level languages and floating point processing.

### CISD022A - Beginning Programming Methodologies in C++

- Design solutions for introductory level problems using appropriate design methodology incorporating elementary programming constructs.
- Create algorithms, code, document, debug, and test introductory level C++ programs.
- Read, analyze and explain introductory level C++ programs.

### CISD022B - Intermediate Programming Methodologies in C++

- Create algorithms, code, document, debug, and test intermediate level C++ programs.
- Read, analyze and explain intermediate level C++ programs and their efficiency.
- Design solutions for intermediate level problems using appropriate design methodology incorporating intermediate programming constructs including structures and objects.

### CISD22BH - Intermediate Programming Methodologies in C++ - HONORS

- Read, analyze and explain intermediate level C++ programs and their efficiency.
- Design solutions for intermediate level problems using appropriate design methodology incorporating intermediate programming constructs including structures and objects.
- Create algorithms, code, document, debug, and test intermediate level C++ programs.

### CISD022C - Data Abstraction and Structures

- Read, analyze and explain advanced data structures programs.
- Design solutions for advanced problems using appropriate design methodology incorporating advanced data structures programming constructs.
- Create and analyze efficiency of advanced level data structures algorithms, code, document, debug, and test advanced data structures programs using multiple source and header files.

### CISD22CH - Data Abstraction and Structures - HONORS

- Read, analyze and explain advanced data structures programs.
- Design solutions for advanced problems using appropriate design methodology incorporating advanced data structures programming constructs.
- Create and analyze efficiency of advanced level data structures algorithms, code, document, debug, and test advanced data structures programs using multiple source and header files.

### CISD026A - C as a Second Programming Language

- Read, analyze and explain introductory and intermediate level C programs.
- Design solutions, create algorithms, code, document, debug, and test introductory and intermediate level problems using appropriate design methodology incorporating elementary and intermediate programming constructs.

### CISD026B - Advanced C Programming

- Read, analyze and explain advanced C programs.
- Design solutions for advanced problems using appropriate design methodology incorporating advanced programming constructs.
- Create algorithms, code, document, debug, and test advanced level C programs using multiple source and header files.

### CISD26BH - Advanced C Programming - HONORS

- Read, analyze and explain advanced C programs.
- Design solutions for advanced problems using appropriate design methodology incorporating advanced programming constructs.
- Create algorithms, code, document, debug, and test advanced level C programs using multiple source and header files.

#### **CISD027. - Programming in C++ for C/Java Programmers**

- Create object oriented programs using the C++ language.

#### **CISD028. - Object Oriented Analysis and Design**

- Design and develop complex software solution from raw requirements using Object Oriented Analysis and Design techniques.
- Synthesize major architectural patterns and frameworks and apply them to create software solutions.

#### **CISD029. - Advanced C++ Programming**

- Read, analyze and explain advanced C++ programs.
- Design solutions, create algorithms, code, document, debug, and test C++ programs using appropriate design methodology and incorporating advanced C++ programming constructs.

#### **CISD030A - Introduction to C# Programming**

- Create algorithms, code, document, debug, and test intermediate level C# programs.
- Read, analyze and explain intermediate level C# programs.

#### **CISD030B - Advanced C# Programming**

- Read, analyze and explain advanced C# programs.
- Create algorithms, code, document, debug, and test advanced problems using appropriate design methodology incorporating object oriented programming constructs and advanced C# concepts.

#### **CISD031. - Operating System Concepts**

- Analyze the functionality of a modern operating system in terms of different management functions.
- Describe the algorithms and basic data-structures being utilized in modern operating systems.

#### **CISD033A - Programming in PERL**

- Design, code, document, analyze, debug, and test introductory level Perl programs that include Perl modules and use operating system features.

#### **CISD035A - Java Programming**

- Read, analyze and explain intermediate level Java programs.
- Create algorithms, code, document, debug, and test intermediate level Java programs.

#### **CISD035B - Advanced Java Programming**

- Read, analyze and explain advanced Java programs.
- Create algorithms, code, document, debug, and test advanced problems using appropriate design methodology incorporating object oriented programming constructs and advanced Java concepts.

#### **CISD036A - Introduction to Computer Programming Using Java**

- Create algorithms, code, document, debug, and test introductory level Java programs incorporating elementary programming constructs.
- Read, analyze and explain introductory level Java programs.

#### **CISD036B - Intermediate Problem Solving in Java**

- Read, analyze and explain intermediate level Java programs.
- Design solutions for intermediate level problems using appropriate design methodology incorporating intermediate programming constructs.
- Create algorithms, code, document, debug, and test intermediate level Java programs.

#### **CISD040. - Introduction to Programming in Python**

- Design, code, document, analyze, debug, and test introductory level Python programs.

#### **CISD041A - Python Programming**

- Design, code, document, analyze, debug, and test introductory level Python programs that include Python modules.

#### **CISD041B - Advanced Python Programming**

- Design, code, document, analyze, debug, and test advanced level Python programs that include Python modules for database, networking, graphics, and extensions.

#### **CISD050. - Introduction to Computers, Data Processing, and Applications**

- Describe the role that information systems play in business operations, management, and strategy.
- Understand how common software, hardware, database, and networking applications can be applied to business problems.

#### **CISD053. - Java for Mobile Development**

- Design mobile applications using object-oriented methodology and advanced Java concepts using Android Development Kit.
- Create algorithms, code, document, debug, and test mobile applications.

#### **CISD055. - iOS Development**

- Design mobile apps using object-oriented methodology and advanced Swift concepts using iOS Development Kit and APIs.
- Create algorithms, code, document, debug, and test mobile applications.

#### **CISD056. - Network Security**

- Determine methods to protect network against security vulnerabilities.

#### **CISD057. - Website Administration**

- Demonstrate how to install, configure and maintain a web server.
- Create and apply user security policies to web server configuration.

#### **CISD063. - Systems Design**

- Describe and communicate system types and the systems development life cycle.
- Analyze system requirements and evaluate proposed solutions.

#### **CISD064A - Database Management Systems**

- Prepare database design using database normalization theory and appropriate database schema representation techniques.
- Code, document, debug, and test introductory level SQL programs.

#### **CISD064B - Introduction to SQL**

- Design solutions for introductory level problems using appropriate design methodology incorporating interpreted database constructs.
- Create algorithms, code, document, debug, and test introductory level SQL programs.

#### **CISD064C - Introduction to PL/SQL**

- Design solutions for introductory level problems using appropriate design methodology incorporating procedural database constructs.
- Create algorithms, code, document, debug, and test introductory level PL/SQL programs.

#### **CISD064E - Fundamentals of Large Scale Cloud Computing**

- Design, implement and debug a distributed system using technology like Web Services.

#### **CISD064F - Introduction to Big Data and Analytics**

- Design, implement and debug a large scale database system using technology like Hadoop or Cassandra.
- Perform data analysis using a large-scale database systems given a set of user requirements.

#### **CISD064G - Data Visualization Methodology and Tools**

- Design and implement reports and dashboards for data and trends analysis using technologies like Tableau, PowerBI, BIRT or Pentaho.

#### **CISD064H - R Programming**

- Design, implement and debug R programs to process data from various sources for data analysis.
- Use R-graphics to display and visualize data.

#### **CISD066. - Introduction to Data Communication and Networking**

- Describe the various components, protocols, architectures, and applications of current communication and networking technologies, which are used in LANs, WANs, and the Internet.
- Define the basic properties of the TCP/IP, local area, wide area, and fiber optic networks.

#### **CISD067A - Local Area Networks**

- Define fundamental concepts of local area networks (LANs) architecture and protocols with emphasis on the first two layers, physical and data link layer, of the OSI model.
- Design a local-area network.

### **CISD067B - Introduction to Wide Area Networking**

- Investigate fundamental concepts of TCP/IP protocol suite with emphasis on the network layer, transport layer, and application layer of the suite.
- Design a small wide-area network.

### **CISD073. - Unix/Linux Systems Programming**

- Design, code, document, analyze, debug, and test client/server application programs for network communications.

### **CISD074. - Software Quality Assurance**

- Write a formal test case specifications using a Test Case Management tool.
- Create bug reports using a defect-tracking tool.
- Develop automated test cases for web apps using Selenium/WebDriver and Python.

### **CISD075A - Internet Concepts and TCP/IP Protocols**

- Define fundamental concepts of TCP/IP architecture and protocols, with emphasis on the network layer, transport layer, and application layer of the suite.
- Describe the applications of TCP/IP to the Internet.

### **CISD075B - Internet Programming with TCP/IP**

- Design and construct client and server applications using TCP/IP protocol suite and applying algorithms for enabling servers.
- Create algorithms, code, document, debug, and test client/server applications.

### **CISD077. - Special Projects in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

### **CISD077X - Special Projects in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

### **CISD077Y - Special Projects in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

### **CISD079. - Managing Technology Projects**

- Determine and match the expectations of the client and complete the steps of a technology project.
- Demonstrate the systematic approach to project design and management.

### **CISD082W - Current Topics in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

### **CISD082X - Current Topics in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

### **CISD082Y - Current Topics in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

### **CISD082Z - Current Topics in Computer Information Systems**

- Explain the fundamental concepts of the Computer Information Systems topic.
- Apply the fundamental concepts of the Computer Information Systems topic.

**CISD083. - Open Computer Information Systems Laboratory**

- Students will be able to write code that requires the application of the concepts learned in CIS 82 - Current Topics in Computer Information Systems.

**CISD089A - Web Page Development**

- Create a web site using HTML and CSS and published to a web server.

**CISD089C - Client-Side Programming with JavaScript**

- Write functions and scripts using JavaScript.

- Create web pages using Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript, and the Document Object Model (DOM), and demonstrate how they interact together within a web document.

**CISD089D - Rich Internet Application Development**

- Create rich internet application using features in tools like HTML5.

- Read, analyze and explain intermediate level Rich Internet Applications.

**CISD095A - Project Management - A Practicum**

- Manage projects using five bodies of knowledge including initiation, planning, control, execution and closing.

- Manage project risks by identifying them and mitigating them.

**CISD095B - Project Planning and Control - A Practicum**

- Create a detailed project plan complete with schedule, budget, risk mitigation plan, data and communication management plan for medium to large size projects.

- Create a detailed plan to control budget, scope, quality, schedule and team risks.

**CISD095C - Risk Assessment and Mitigation - A Practicum**

- Manage risks using tools and techniques learned in the course.

- Develop procedures and techniques to pro-actively reduce threats for project objectives.

**CISD095D - Managing Outsourcing - A Practicum**

- Create a RFP for a given set of requirements.

- Accept and analyze bids for an RFP.

- Manage the outsourced vendor inline to the contractual requirements.

**CISD095E - CAPM and PMP Exam Preparation**

- Complete a CAPM or PMP application.

- Prepare for CAPM and PMP exam by exploring Project Management Book of Knowledge (PMBOK).

**CISD095F - Managing Cloud Projects**

- Create cloud strategy within a business context being mindful of governance issues and business processes.

**CISD095G - Agile Project Management - A Practicum**

- Illustrate usage of Agile Software practices in product delivery, tracking and monitoring projects.

- Demonstrate creation of project plans with Agile Development methodology while understanding business value and planning feature iterations.

**CISD095H - Business and Requirement Analysis**

- Create business requirements being mindful of customer needs, objectives and change management.

**CISD095J - Applying Emotional Intelligence for Effective Project Management**

- Recognize emotions in the workplace and practice empathy and rapport to better manage project tensions due to emotions.

**CISD095K - Program Management - A Practicum**

- Manage programs by identifying strategic objectives, manage program life cycle, manage stakeholder expectations and governance.

**CISD095L - Portfolio Management - A Practicum**

- Manage portfolio by identifying strategic objectives, manage program life cycle, manage stakeholder expectations and governance.

**CISD097. - FLASH Animation**

- Students will be able to develop, with accuracy, use of Flash animation by using filters, tools, vectors, bitmaps, digital video and

graphics within software to achieve clients goals of dynamic, interactive website.

- Students will be able to develop and program inverse Kinematics, build and program interactivity, program and use video, program and control sound.
- Students will be able to program optimal playback and publishing settings for major platforms.

#### **CISD098. - Digital Image Editing Software (Photoshop)**

- Demonstrate correct use of Photoshop tools to alter existing graphics for Internet, print applications, scientific research imaging, and medical imaging.
- Convert digital images and digital media into a movie format for interactive platforms of phone apps and web pages.

#### **CISD099. - Office Software Applications**

- Demonstrate correct format for creating letters using a word processing software.
- Create spreadsheets to solve business problems.
- Use of database software to create, search, modify and arrange information.
- Create a text/graphics presentation using presentation graphics software.

#### **CISD102. - Ethical Hacking**

- Demonstrate the ability to attack and defend a network.

#### **CISD104. - Digital Forensics and Hacking Investigation**

- Demonstrate data recovery and cybercrime forensics investigation techniques.

#### **CISD105. - Cloud Security Fundamentals**

- Identify the risks in utilizing cloud services.
- Identify the steps required to secure a cloud environment.

#### **CISD108. - Personal Computer Security Basics**

- Determine the best plan of action to stop malware based on security breach scenarios.

#### **CISD170F - Windows Administration**

- Manage disks and file systems.
- Configure Windows security features, networking and application support, and troubleshoot system.

#### **CISD308. - Personal Computer Security Basics**

- Determine the best plan of action to stop malware based on security breach scenarios.

#### **CISD318A - Introduction to Unix/Linux**

- Use the Unix/Linux Operating System utilities and shell features for basic file manipulation, networking, and communication.

#### **CISD340. - Introduction to Programming in Python**

- Design, code, document, analyze, debug, and test introductory level Python programs.

#### **CISD398. - Digital Image Editing Software (Photoshop)**

- Demonstrate the correct use of Photoshop tools to alter existing graphics for the Internet, print applications, scientific research imaging, and medical imaging.
- Convert digital images and digital media into a movie format for interactive platforms of phone apps and web pages.

#### **CISD399. - Office Software Applications**

- Demonstrate correct format for creating letters using a word processing software.
- Create spreadsheets to solve business problems.
- Use of database software to create, search, modify and arrange information.
- Create a text/graphics presentation using presentation graphics software.

### **REST - Real Estate**

#### **CSLO**

#### **RESTD050. - Real Estate Principles**

- Demonstrate a knowledge of how real property is described, acquired, appraised, financed, encumbered and leased.
- Describe how title to real property is held in California.
- Evaluate factually simple real estate contract issues from a buyer's, seller's and real estate agent's perspective and identify and evaluate ethical issues in a California real estate context.

#### **RESTD051. - Real Estate Practices**

- Demonstrate an ability to handle offers, including negotiating and making counteroffers.
- Describe the events that take place after a purchase and sale agreement is signed.
- Describe the functions of a property manager and identify the types of documents commonly used by property managers.

#### **RESTD052A - Legal Aspects of Real Estate**

- Demonstrate a knowledge of the basic workings of the legal system in California and the United States as it applies to California real estate and demonstrate a knowledge of the various types of listing agreements.
- Explain and evaluate the real estate licensing process and the administrative agencies that regulate the California real estate industry.
- Explain and evaluate the different forms of holding title to real estate in California and risks/returns therein.

#### **RESTD053. - Real Estate Finance**

- Demonstrate knowledge of how real estate is financed in California from a lending, regulatory and borrowers perspective.
- Demonstrate knowledge as to the real estate lending/borrowing process from underwriting and qualifying through funding and loan retirement.

#### **RESTD055. - Real Estate Property Management**

- Create property management marketing plan.
- Identify essential lease provisions.
- Identify best practices to reduce property management risk.

#### **RESTD061. - Real Estate Investments**

- Identify, analyze and evaluate real estate investments and construct cash flow models utilizing discounted cash flows for analysis of economic viability of investment property.
- Evaluate the risks and returns of real estate investment in residential, commercial, industrial properties as well as land development.
- Explain and evaluate the taxation and financing issues in the acquisition, ownership and sale of real estate investments.

#### **RESTD350. - Real Estate Principles**

- Demonstrate a knowledge of how real property is described, acquired, appraised, financed, encumbered and leased.
- Describe how title to real property is held in California.
- Evaluate factually simple real estate contract issues from a buyer's, seller's and real estate agent's perspective and identify and evaluate ethical issues in a California real estate context.

#### **RESTD351. - Real Estate Practices**

- Demonstrate an ability to handle offers, including negotiating and making counteroffers.
- Describe the events that take place after a purchase and sale agreement is signed.
- Describe the functions of a property manager and identify the types of documents commonly used by property managers.

#### **RESTD352A - Legal Aspects of Real Estate**

- Demonstrate a knowledge of the basic workings of the legal system in California and the United States as it applies to California real estate and demonstrate a knowledge of the various types of listing agreements.
- Explain and evaluate the real estate licensing process and the administrative agencies that regulate the California real estate industry.
- Explain and evaluate the different forms of holding title to real estate in California and risks/returns therein.

#### **RESTD353. - Real Estate Finance**

- Demonstrate knowledge of how real estate is financed in California from a lending, regulatory and borrowers perspective.
- Demonstrate knowledge as to the real estate lending/borrowing process from underwriting and qualifying through funding and loan retirement.

#### **RESTD355. - Real Estate Property Management**

- Create property management marketing plan.

- Identify essential lease provisions.
- Identify best practices to reduce property management risk.

#### **RESTD361. - Real Estate Investments**

- Identify, analyze and evaluate real estate investments and construct cash flow models utilizing discounted cash flows for analysis of economic viability of investment property.
- Evaluate the risks and returns of real estate investment in residential, commercial, industrial properties as well as land development.
- Explain and evaluate the taxation and financing issues in the acquisition, ownership and sale of real estate investments.