

Curriculum Committee Report to the Faculty Senate March 15, 2017

The Curriculum Committee approved the following curriculum requests and course proposals and asks the Faculty Senate to accept the committee's recommendations.

Courses

New Courses

NEW 171 – Principles of Process Quality (3 credits)

This course was originally submitted as **NEW 101**

Proposal Rationale:

New Course for Associates in Science in Integrated Industrial Technology

Catalog Description:

The Principles of Quality introduces the student to quality concepts, including operating consistency, continuous improvement, plant economics and statistical process control (SPC)

Prerequisites:

None

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Discuss the history of the quality movement in the United States and the state of the movement in the automation industry today.
- 2) Differentiate between processes, systems, and organizational learning.
- 3) Analyze the impact of quality on an organization's economic performance.
- 4) Understand variance, operating consistency, and SPC and use statistical tools to conduct an analysis of process variance.
- 5) Apply data collection, representation, analysis, and interpretation skills in a real-world scenario.

Action: 19 approve, 0 disapprove, 0 abstain

NEW 101 – Industrial Safety Health and Environment (3 Credits)

This course was originally submitted as **NEW 102**

Proposal Rationale:

New Course for Associate in Science in Integrated Industrial Technology (IIT)

Catalog Description:

The Safety Health and Environment course emphasizes the development of knowledge and skills to reinforce the attitudes and behaviors required for safe and environmentally sound work habits for industrial work environments. Coursework, demonstrations and exercises highlight the importance of regulatory compliance issues to be addressed in the performance of all job tasks, Course topics will be reinforced through scenarios performed at the campus as well as industrial sites as available.

Prerequisites:

None

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Anticipate, recognize, and evaluate potential hazards to people, property, and the environment with respect to risk and regulatory requirements.
- 2) Control potential and existing hazards to people, property, and the environment to achieve acceptable levels of risk or meet regulatory requirements.
- 3) Manage and communicate safety, health, and environmental information to peers and stakeholders.
- 4) Function as a member of the safety professional community, with a commitment to continuing professional growth.
- 5) Acknowledge the standards of professional conduct that are published by professional safety organizations and/or certification bodies.

Action: 19 approve, 0 disapprove, 0 abstain

NEW 131 – Mechanical Drive Systems ((3 Credits)

This course was originally submitted as **NEW 103**

Proposal Rationale:

New Course for Associate in Science, integrated Industrial Technology (IIT)

Catalog Description:

This course is an introduction to mechanical drive systems that are typical to automated manufacturing and process systems. The course provides students with an understanding of mechanical energy transmission concepts. Students will apply these concepts to design, configure, and conduct performance analysis on mechanical transmission systems.

Prerequisites:

None

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Describe basic mechanical components and drives such as clutches, gears, brakes, belt and chain drives and explain their role in a mechatronic system.
- 2) Analyze technical documentation and datasheets to configure drive and shafting systems.
- 3) Use precision measuring instruments to configure and align mechanical drive systems.
- 4) Collect and analyze performance analysis data to determine the operating condition of a mechanical drive system, to include vibration, sound, load and inductive loading characteristics.
- 5) Calculate sprocket ratio, shaft speed, and torque of a chain drive system.

Action: 19 approve, 0 disapprove, 0 abstain

NEW 121 –Electro Hydraulics and Pneumatics (Fluid Power Systems) (3 Credits)

This course was originally submitted as **NEW 104**

Proposal Rationale:

New Course for Associate in Science, Integrated Industrial Technology (IIT)

Catalog Description:

This course covers the fundamentals of fluid power and fluid power systems. Students will learn the operating principles and components of hydraulic and pneumatic systems including pumps, compressors and actuating devices. Students will learn to design, configure and troubleshoot hydraulic and pneumatic systems for industrial automation and process control, incorporating automated actuator control and fail-safe interlocks into the design process. Facilitated learning and practical exercises reinforce the learning.

Prerequisites:

None

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Solve problems for flow and pressure, relating to hydraulic and pneumatic systems.
- 2) Simulate hydraulic and pneumatic circuits using Festo Fluid-Sim Simulation.
- 3) Design simple fluid power system using industry standard symbols for manual (discrete/variable) controls.
- 4) Analyze practical fluid power systems involved in the implementation of process control systems.

5) Apply the functions of fluid power systems to industrial applications.

Action: 19 approve, 0 disapprove, 0 abstain

NEW 151 – Rapid Prototyping (3 Credits)

This course was originally submitted as **NEW 105**

Proposal Rationale:

New Course for Associate in Science, Integrated Industrial Technology (IIT)

Catalog Description:

This course introduces the student to 3d modeling using the CAD/CAM mechanical design automation software. Students will build parametric models of parts and assemblies, and make drawings of those parts and assemblies. The student will study CAD/CAM software configurations, and translate parametric models to produce prototypes using both additive and subtractive manufacturing methods. The course will cover g-code and basic machine safety.

Prerequisites:

None

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Demonstrate basic part modeling using 3d CAD modeling software.
- 2) Demonstrate basic assembly modeling using 3d CAD modeling software.
- 3) Simulate a complete assembly model component parts.
- 4) Troubleshoot and repair 3d model using part editing tools.
- 5) Compile part drawing files for export to additive and subtractive prototyping tools.
- 6) Produce a prototype of a 3d part model using additive manufacturing methods.

Action: 19 approve, 0 disapprove, 0 abstain

NEW 201 –AC/DC Circuits (4 Credits)

Proposal Rationale:

New course for Associate in Science, Integrated Industrial Technology (IIT).

Catalog Description:

The Fundamentals of DC and AC Circuits introduces the student to direct current and alternating current theory and the laws that represent electrical concepts. The course includes circuit configurations, source and load types, as well as the wiring

configurations of common DC and AC electrical devices. Practical exercises reinforce theory, incorporate experimental learning, and emphasize basic circuit analysis and troubleshooting. The course contextualizes the proper use of electrical tools and test equipment.

Prerequisites:

Earned a minimum grade of C in ICS – Discrete Mathematics for Computer Science I

Earn a minimum grade of C in MATH 103 – College Algebra or higher in STEM track.

Co-requisites:

None

Recommended Course Preparation:

Must be able to use a desktop and/or laptop computer with a high degree of proficiency.

Learning Outcomes:

- 1) Analyze the nature of DC and AC electricity and quantities, units and measurements associated with it.
- 2) Properly identify the abbreviations, acronyms, and symbols of DC and AC electrical components in an electrical circuit, and the function of each one.
- 3) Manipulate equations and solve problems by the application of Ohm's law.
- 4) Demonstrate the appropriate process for making resistance, voltage and current measurements using test and measurement tools.
- 5) Calculate the voltage, resistance, and current for series, parallel, and series/parallel circuits for DC circuits.
- 6) Apply the understanding of resistance, inductance, and capacitance to DC and AC circuits and their application to power loads.

Action: 21 approve, 0 disapprove, 0 abstain

NEW 221 – Programmable Logic Control (4 Credits)

This course was originally submitted as **NEW 202**

Proposal Rationale:

New course for Associate in Science, Integrated Industrial Technology (IIT).

Catalog Description:

This course covers the fundamentals of programmable logic controller (PLC) hardware, programming and integration with mechatronic automation systems. Students will integrate PLC functions by writing logic programs and testing these programs on a functioning system. Students will identify malfunctioning PLC programming and apply troubleshooting strategies to identify and localize problems caused by PLC hardware.

Prerequisites:

Earned a minimum grade of C in ICS 141 – Discrete Mathematics for Computer Science I

Co-requisite:

None

Recommended Course Preparation:

Must be able to use a desktop and/or laptop computer with a high degree of proficiency.

Learning Outcomes:

- 1) Describe the basic functions and design of programmable logic controllers.
- 2) Read, analyze, and utilize the technical documents such as data sheets, timing diagrams, operation manuals, schematics, and ladder diagrams.
- 3) Explain the role of programmable logic controller programs, upload, test, and integrate the program to an automated process.
- 4) Correctly localize, identify, and document system malfunctions in or caused by programmable logic controller hardware, based upon the technical documentation.
- 5) Trace and describe the flow of information in a given mechatronic system or subsystem with a focus on the control function of programmable logic controllers in the system.

Action: 21 approve, 0 disapprove, 0 abstain

**NEW 231 –Process Control and Instrumentation
(4 Credits)**

This course was originally submitted as **NEW 203**

Proposal Rationale:

New Course for Associate in Science, integrated Industrial Technology (IIT)

Catalog Description:

This course is a study of the instruments and instrument control systems used in a variety of processing industries, including instrumentation unique to manufacturing and automated production and processing systems. Topics include terminology, process variables, symbology, control loops, and basic troubleshooting, as well as temperature, pressure and flow formulas used in the process and industrial automation industries.

Prerequisites:

Earned a minimum grade of C in ICS 141 – Discrete Mathematics for Computer Science I

Any or the following:

Earned a minimum grade of C in MATH 103 – College Algebra or higher in STEM track.

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Examine the function of various instruments used in the process and automated manufacturing industry.
- 2) Diagram process control elements in a control loop.
- 3) Examine, identify and calculate each of the process variables, and the relationship between and among each variable.
- 4) Assess the methods and devices used to measure differential pressure, temperature, and the flow in a system.
- 5) Determine the purpose, operation, and forces associated with common pressure sensing and measurement devices used in the process industry.
- 6) Analyze the relationship between components, measuring devices, and controllers in a process control loop.

Action: 21 approve, 0 disapprove, 0 abstain

NEW 251 – Motor and Motion Control (4 Credits)

This course was originally submitted as **NEW 204**

Proposal Rationale:

New Course for Associate in Science, Integrated Industrial Technology (IIT).

Catalog Description:

The fundamentals of Motor and Motion Control systems is an introductory course to AC & DC motors of various types and the integrated control systems used to control the power and function of electric motors. It is designed to give the student an overview of and introduction to the basic principles of the components and circuitry logic programs that integrate motors to systems. Course work emphasizes an overall understanding of the systems, engineering, equipment, and operations of a typical motor system.

Prerequisites:

Earned a minimum grade of C in ICS 141 – Discrete Mathematics for Computer Science I

Co-requisites:

None

Recommended Course Preparation:

Must be able to use a desktop and/or laptop computer with a high degree of proficiency.

Learning Outcomes:

- 1) Demonstrate proper safety rules and procedures while working on electromechanical or mechatronic systems.
- 2) Demonstrate the function and proper use of electrical tools and test instruments used in the installation, maintenance and troubleshooting of motors and motor control systems.
- 3) Explain how AC and DC motors and their control mechanisms interact with other components in an integrated electromechanical or mechatronic system.
- 4) Demonstrate motor control strategies, including voltage and frequency control.
- 5) Integrate a coordinated methodology of measurements and adjustments on motors and motor control components in an electromechanical or mechatronic system.
- 6) Demonstrate how to protect motors and prevent motor failure from operating outside of their physical and/or electrical specifications.

- 7) Develop a troubleshooting methodology to localize, identify and document causes of malfunctions in motor circuits, based upon the technical documentation.

Action: 21 approve, 0 disapprove, 0 abstain

NEW 205 – Digital and Analog Circuits (4 Credits

Proposal Rationale:

New Course for Associate in Science, Integrated Industrial Technology (IIT)

Catalog Description:

Digital and Analog circuits introduces the student to the characteristics and applications of semiconductor devices and circuits as well as digital logic functions, combinational, flip flop, and register memory logic circuits. Practical exercises reinforce theory, incorporate experimental learning, and emphasize basic circuit analysis and troubleshooting. The course contextualizes the proper use of electrical tools and test equipment.

Pre-requisites:

Earn a minimum grade of C in ICS 141 – Discrete mathematics for Computer Science I

Earn a minimum grade of C in NEW 201 –AC/DC Circuits

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Identify and describe the operation of semiconductor devices.
- 2) Analyze where and how digital and analog components are used in electronic circuits.
- 3) Select digital and analog devices using component specifications based on circuit requirements.
- 4) Construct operational circuits using digital and analog devices.
- 5) Select and demonstrate the use of appropriate test equipment to analyze circuit operation.
- 6) Use appropriate troubleshooting techniques to evaluate circuit performance.

- 7) Analyze power supply, amplifier and oscillator circuits for normal and abnormal operating characteristics.

Action: 21 approve, 0 disapprove, 0 abstain

NEW 271- Distributed Control Systems (3 Credits)

This course was originally submitted as **NEW 206**

Proposal Rationale:

New Course for associate in Science, Integrated Industrial Technology (IIT)

Catalog description:

This course introduces the student to logical process automation systems such as Distributed control systems (DCS) and Programmable Automation Controllers (PAC).

Prerequisites:

Earn a minimum grade of C in ICS 141- Discrete Mathematics for computer Science I

Earn a minimum grade of C in NEW 221 – Programmable Logic control

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) Define distributed control systems and programmable automation controller system capabilities and limitations.
- 2) Interpret sequential function charts.
- 3) Implement a cascade control sequence.
- 4) Configure continuous and sequential control strategies.
- 5) Develop a function block structure.
- 6) Develop HART input/output and configure the input/output to alarms with thresholds.

Action: 21 approve, 0 disapprove, 0 abstain

NEW 281- Supervisory Control and Data Acquisition (SCADA) Systems (4 Credits)

This course was originally submitted as **NEW 207**

Proposal Rationale:

New Course for Associate in Science, Integrated Industrial Technology (IIT)

Catalog Description:

This course introduces students to Supervisory Control and Data Acquisition (SCADA) Systems concepts, including basic architecture and technology. This course includes how SCADA software is configured programmed and networked. Students will program SCADA software, integrate input/output devices, networking, and communication configurations.

Prerequisites:

Earn a minimum grade of C in NEW 221- Programmable Logic Control

Co-requisites:

None

Recommended Course Preparation:

None

Learning Outcomes:

- 1) diagram the architecture and technology of a SCADA System.
- 2) Contrast SCADA systems to other information systems.
- 3) Evaluate the limitations of current SCADA technology.
- 4) Design a simplified SCADA application.
- 5) Configure the Human Machine Interface of a simplified SCADA application.
- 6) Configure SCADA using standard industrial protocols.

Action: 21 approve, 0 disapprove, 0 abstain

ED 336 – Student Teaching Portfolio (3 Credits)**Proposal Rationale:**

This course will provide guidance on developing a student teaching portfolio providing evidence of proficiency in Council for Exceptional Children initial teacher standards, which is a Hawaii Teacher Standards Board requirement for recommendation for teacher licensure. The portfolio is part of the Advanced Professional Certificate in SPED PK-12.

Catalog Description:

This course guides students through the process of providing documented evidence of teaching proficiencies aligned with initial preparation standards from Hawaii Teachers Standards Board, the Council for Exceptional children, and the Interstate Teacher Assessment and Support Consortium (InTASC). The portfolio will be assessed as part of recommendation for licensure in SPED PK-12 in the state of Hawaii.

Prerequisites:

- Earned a minimum grade of C in
 - ED 330 - SPED Law and IEP Development
 - ED 331 - Special Education Assessment
- And Completed this many years of degree 4 years of bachelor's degree.

Co-requisites:

None

Recommended Course Preparation

ED 332 – English language Arts Instruction and Intervention

ED 334 – Participating in a Professional Community

ED 335 – Educational Technology for the Inclusive Classroom

Learning Outcomes:

- 1) Develop a professional teaching portfolio that demonstrates proficiency in the Hawaii Teachers Standards Board's standards for teacher licensure in SPED PK-12.
- 2) Analyze and reflect on evidence used for portfolio that demonstrates an ability to modify and improve professional conduct.

Action: 21 approve, 0 disapprove, 0 abstain

Programs

AS – IIT Associate in Science – Integrated Industrial Technology

Description:

The Associate in Science in Integrated Industrial Technology (AS-IIT) is a 61-credit degree program intended to provide students with a foundation in electronic, electrical, mechanical, and automated control systems to meet the workforce needs of an emerging industrial technology industry. This program provides students with a theoretical and practical understanding of mechatronic systems and develops practical skills and systems integration. Graduates will be able to program, operate, maintain, calibrate, and repair the equipment that makes up these systems. The degree prepares students for occupations that involve the integration of electronic, electrical, mechanical, and communications systems. Typical occupations may include automated programmable electromechanical systems technicians, robotics and manufacturing systems technicians, and process control systems integration technicians

Program Learning Outcomes:

1. Apply the principles of mathematics, electronics, mechanical systems, and controls systems to program, maintain, calibrate, and repair advanced integrated systems in manufacturing and transportation.
2. Use appropriate safety, health, and personal protection procedures applicable to an industrial working environment.
3. Demonstrate an understanding of the structure and function of mechatronic systems and follow a logical sequence for isolating problems within an industrial process.
4. Analyze process control system operations and select the appropriate sensing equipment for that operation.
5. Analyze the operating difficulties of an automated system and perform the corrective actions needed.
6. Utilize proper procedures for inspection, preventive maintenance, and corrective maintenance of integrated industrial systems.

7. Demonstrate an understanding of the theory, construction, installation and operation of hydraulic and pneumatic systems in an automated controls environment.
8. Demonstrate an understanding of mechanical drive systems, their function and the operation in an automated controls environment.
9. Apply principles of process quality assurance to an automated control environment.
10. Use CAD/CAM to create drawings of parts and assemblies to create prototypes using additive manufacturing.

Program Curriculum Plan:

The proposed IIT curriculum is presented below with six existing general education courses and twelve new credit technical courses creating new career pathways for students. The program will also provide a clear structured pathway for both full-time and part-time students and is designed to provide an alternative graduation pathway for students that are not able to complete the more rigorous Associate in Science - Natural Science (ASNS) program.

The IIT Program will increase enrollment from target populations; specifically, it will provide an opportunity for adult learners (industry professionals) to return to attain a degree in their profession. The program will take advantage of the existing Prior Learning Assessment (PLA) program and provide an avenue for adult learners to earn a degree faster than traditional students.

All required IIT courses must be passed with a grade of “C” or better in order to be applied to the degree.

Core Requirements: 42 credits

- IIT 101 Safety, Health, and Environment (3)
- IIT 121 Electro-hydraulics and Pneumatics (3)
- IIT 131 Mechanical Drive Systems (3)
- IIT 151 Rapid Prototyping (3)
- IIT 171 Principles of Process Quality (3)
- IIT 201 AC/DC Circuits (4)
- IIT 205 Digital and Analog Circuits (4)
- IIT 221 Programmable Logic Control (4)
- IIT 231 Process Control and Instrumentation (4)
- IIT 251 Motor and Motion Control (4)

- IIT 271 Distributed Control Systems (3)
- IIT 281 Supervisory Control & Data Administration (4) General Education Requirements: 19 credits
- Arts & Humanities (100 level or above) (3)
- ENG 100 Composition I (3)
- ICS 141 Discrete Mathematics for Computer Science I (3)
- MATH 103 College Algebra or higher (3)
- PHYS 100 Survey of Physics (3)
- PHYS 100L Survey of Physics Laboratory (1)
- Social Sciences (100 level or above) (3)

Program Rules

Semester 1

- Completed the following:
 - [NEW 101](#) - Industrial Safety Health and Environment
 - [NEW 131](#) - Mechanical Drive Systems
 - [NEW 121](#) - Electro Hydraulics and Pneumatics (Fluid Power Systems)
 - [ENG 100](#) - Composition I
 - [MATH 103](#) - College Algebra

Semester 2

- Completed the following:
 - [ICS 141](#) - Discrete Mathematics for Computer Science I
 - [PHYS 100](#) - Survey of Physics
 - [PHYS 100L](#) - Survey of Physics Laboratory
 - [NEW 171](#) - Principles of Process Quality
 - [NEW 151](#) - Rapid Prototyping
- Any Social Sciences Course (100 level or above)

Semester 3

- Completed the following:
 - [NEW 201](#) - AC/DC Circuits
 - [NEW 231](#) - Process Control and Instrumentation
 - [NEW 251](#) - Motor and Motion Control

- [NEW 221](#) - Programmable Logic Control

Semester 4

- Completed the following:
 - [NEW 205](#) - Digital and Analog Circuits
 - [NEW 271](#) - Distributed Control Systems
 - [NEW 281](#) - Supervisory Control and Data Acquisition (SCADA) Systems
- Any Arts and Humanities Course (100 level or above)

Action: 21 approve, 0 disapprove, 0 abstain

CA – IIT Certificate of Achievement – Integrated Industrial Technology

Description:

The Certificate of Achievement in Integrated Industrial Technology (CA-IIT) program is intended to provide students with entry-level skills in hydraulic, pneumatic, and mechanical drive systems, as well as apply principles of process quality assurance in an automated controls environment to meet the workforce needs of an emerging industrial technology industry. Students will be able to perform inspection, preventative maintenance, and corrective maintenance while applying proper safety, health, and personal protection procedures. Students will also gain experience in computer-aided design (CAD) to create drawings of parts and assemblies for prototypes.

Program Learning Outcomes:

- 1) Use appropriate safety, health, and personal protection procedures applicable to an industrial working environment.
- 2) Utilize proper procedures for inspection, preventive maintenance, and corrective maintenance of integrated industrial systems.
- 3) Demonstrate an understanding of the theory, construction, installation and operation of hydraulic and pneumatic systems in an automated controls environment.

- 4) Demonstrate an understanding of mechanical drive systems, their function and the operation in an automated controls environment.
- 5) Apply principles of process quality assurance to an automated control environment.
- 6) Use CAD.CAM to create drawings of parts and assemblies to create prototypes using additive manufacturing.

Program Curriculum Plan:

This certificate contains these courses:

First semester requirements (15 credits)

- IIT 101 Safety, Health, and Environment (3)
- IIT 121 Electro-hydraulics and Pneumatics (3)
- IIT 131 Mechanical Drive Systems (3)
- ENG 100 Composition I (3)
- MATH 103 College Algebra or higher in STEM track (3)

Second semester requirements (16 credits)

- IIT 151 Rapid Prototyping (3)
- IIT 171 Principles of Process Quality (3)
- ICS 141 Discrete Math for Computer Science I (3)
- PHYS 100 Survey Of Physics (3)
- PHYS 100L Survey of Physics Laboratory (1)
- Social Sciences (100 Level & Above) (3)

This certificate will use the same admission, advising, and counseling resources as the As in IIT program. To earn the certificate, a minimum of a “C” grade in each of the courses is required.

Action: 19 approve, 0 disapprove, 0 abstain

CO – IIT Certificate of Competence – Integrated Industrial Technology

Description:

The Certificate of Competence in Integrated Industrial Technology (CO-IIT) program is intended to provide students with entry-level skills in hydraulic, pneumatic, and mechanical drive systems in an automated controls environment to meet the workforce needs of an

emerging industrial technology industry. Students will be able to perform inspection, preventative maintenance, and corrective maintenance while applying proper safety, health, and personal protection procedures. Students will also gain experience in computer-aided design (CAD) to create drawings of parts and assemblies for prototypes.

Program Learning Outcomes:

- 1) Use appropriate safety, health, and personal protection procedures applicable to an industrial working environment.
- 2) Utilize proper procedures for inspection, preventive maintenance, and corrective maintenance of integrated industrial systems.
- 3) Demonstrate an understanding of the theory, construction, installation and operation of hydraulic and pneumatic systems in an automated controls environment.
- 4) Demonstrate an understanding of mechanical drive systems, their function and the operation in an automated controls environment.

Program Curriculum Plan:

This certificate contains these courses:

- IIT 101 Safety, Health, and Environment (3)
- IIT 121 Electro-hydraulics and Pneumatics (3)
- IIT 131 Mechanical Drive Systems (3)
- ENG 100 Composition I (3)
- MATH 103 College Algebra or higher in STEM track (3)

This certificate will use the same admission, advising, and counseling resources as the AS in IIT program. To earn the certificate, a minimum of a "C" grade in each of the courses is required.

Action: 19 approve, 0 disapprove, 0 abstain

APC- SPED Advanced Professional Certificate in Special Education Mild/Moderate PK-12

Proposal Rationale:

Description:

The Advanced Professional Certificate in SPED Mild/Moderate PK-12 is a 24 cr. certificate for those with a bachelor-level degree in any field which leads to recommendation for licensure to teach SPED.

Program Learning Outcomes:

- 1) Explain and practice the special education policies, procedures and legal requirements regarding students with disabilities.
- 2) Describe the range and multiple manifestations of disabilities and their effects on social and emotional development, communication skills and oral language development, motor skills, functional and independent living skills, employment-related skills, and self-advocacy skills.
- 3) Design and implement individualized educational programs and will have a repertoire of instructional strategies, accommodations, assessment techniques and procedures that are appropriate for students with disabilities.
- 4) Explain strategies for collaborating with families and other professionals to further student learning.
- 5) Identify how to access resources and assistive technologies to support student learning, and to provide transition support to help students maintain continuous progress toward their educational goals.

Program Justification:

The majority of emergency hire teaching positions and new vacancies continue to be for special education teachers in hard-to-staff rural and/or high poverty schools. In fact for the 2015-2016 SY, 26.7 percent of all new hires were assigned to Leeward District schools. Of the newly employed teachers, 9.6 percent were hired for elementary special education positions and 11.9 percent were hired for special education inclusion positions. Hawaii's largest teacher education program at UH Manoa produces 20.1 percent of newly hired teachers. According to the Hawaii Teacher Standards Boards 2014 Annual Report on Educator Preparation Programs, 54% of candidates who complete educator education programs in Hawaii come from UH campuses (Leeward CC-2; UH Hilo-26, UH Manoa-318; UH West Oahu-14) with the next largest educator preparation program, Chaminade University, producing 12% of program completers. According to the Hawaii Teachers Standards Board's Executive Summary, for at least the past seven years, vacancies of special education teaching positions have been largely

filled by teachers who were new, unqualified or inexperienced. Evaluators from a 5-year special education teacher retention review concluded: “The filling of SpEd vacancies by unqualified and inexperienced teachers has certainly had a dramatic effect on those students in their charge, and whether these teachers would continue their teaching careers in SpEd.” (HSTA Executive Summary SPED Survey, August 2015). The Hawaii Department of Education hires about 1,500 new teachers annually. Out of the newly hired HDOE teachers, 68 percent have absolutely no previous teaching experience. According to the Hawaii Public Schools Employment Report (2013-2014), 43.1 percent of newly hired teachers hold out-of-state SATEP College Degrees and 19.3 percent of new teachers are hired without a SATEP Degree. Furthermore, non-SATEP and TFA teachers represent about 25 percent of new hires, and 70 percent of them leave the teaching profession within the first three years (HDOE New Teacher Retention Report, November 2015; Hawaii Public Schools Employment Report, 2013-2014). As a result, the HDOE has recently released solicitation for alternate route certification of teachers with priority for candidates employed in the Zones of School Innovation (identified as high poverty, low-performing schools). Despite the \$1,500-\$6,000 retention bonuses used as relocation incentives to recruit and retain teachers in hard-to-fill placements (particularly special education positions in high poverty schools) a study of Hawaii’s compensation system conducted by Augenblick, Palaich and Associates (APA) noted that “retention of licensed SPED teachers bonuses were received by so few people--fewer than 10 teachers per year.” Based on the November 2015 Hawaii Department of Education Teacher Retention Report, Hawaii’s cost of teacher turnover is between \$6,233,981 and \$13,569,084 based on 1,428 teachers leaving the profession in Hawaii at an estimated cost of between \$4,366 and \$9,502 per teacher (includes costs of terminations, recruitment, hiring, substitutes, learning losses and training). Offering the state’s most affordable and accessible SATEP pathway to earn an APC in SPED PK-12 would enable Hawaii state residents to pursue a teaching career in a community they are deeply committed to and, in many cases, have already dedicated years serving in the local education system. Student enrollment in Leeward Community College’s Teacher Education Program would increase significantly by allowing AAT graduates to seamlessly transition into one additional year of SPED coursework and a final year of clinical practice at one of our partner institutions. Furthermore, working professionals or those with family commitments would be able to earn the APC through the state’s most affordable distance learning courses. As a program focused on experiential learning and flexible delivery, the

APC in SPED would be accessible to students statewide, thereby meeting critical special education teacher shortages in historically underserved rural communities across Hawaii. Since the APC in SPED will target locally sourced paraeducators, emergency hires, and substitute teachers the program can help reduce the state's significant financial investment in new teacher mentoring, introductory cultural orientations, and increased funds allocated to out-of-state travel for administrators to recruit SPED teachers to work in Zones of School Innovation. The APC in SPED alleviate the chronic shortage of special education teachers statewide by recruiting candidates rooted in communities serving large culturally and linguistically diverse populations who have demonstrated experience and commitment to working with students with special needs. Leeward CC's APC in SPED's accessibility and affordability would attract a non-transient teacher workforce with job-related experience, thereby reducing the heavy dependency on continuous external recruitment of unqualified, inexperienced, and short-lived teachers.

Program Curriculum Plan:

Admission requirements for the APC in SPED include: bachelor-level degree in any field, 2 letters of recommendation, and a personal statement. To earn an Advanced Professional Certificate, candidates must achieve a GPA of 2.0 or higher for all courses applicable to the certificate.

Year 1

Fall Semester: (9 credits)

ED 330: SPED Law and IEP Development (3 credits)

ED 331: SPED Assessment (3 credits)

ED 332: ELA Interventions (3 credits)

Spring Semester: (6 credits)

ED 334: ED Tech for Students with Exceptionalities (3 credits)

ED 335: Participating in a Professional Community (3 credits)

*each course requires 22 hours of field experience in a SPED placement in the grade level of licensure they intend to pursue (PK-3, K-6, 6-12)

Year 2

Clinical Practice: 420 hours Spring Semester: (9 credits)

Student Teaching (3 credits)

Full-time student teaching-15 weeks

Student Teaching Seminar (3 credits)

Portfolio (3 credits)

Total 24 credits

Action: 21 approve, 0 disapprove, 0 abstain

