

HED-55 – EKG Technician Certificate Program with Clinical Externship

Professional Education Course Syllabus

Program includes National Certification & a Clinical Externship Opportunity

Course Contact Hours: 50

The EKG Technician Profession

EKG technicians are in demand! EKG technicians work in physician's offices, hospitals, clinics, and other healthcare facilities and organizations. EKG technicians also work for insurance companies to provide data for health and life insurance policies. Similar to other growing healthcare professions, the demand for EKG technicians is expected to continue to grow substantially. Approximately 25% more EKG technician jobs will be available by the year 2020.

The EKG Technician Program

This EKG Technician Program prepares students to perform EKG's. This course will include information on anatomy and physiology of the heart, medical disease processes, medical terminology, medical ethics, legal aspects of patient contact, electrocardiography and stress testing. A highly interactive course!

This EKG Technician program prepares students to function as EKG technicians. This course covers the following key areas and topics:

- Detailed anatomy and physiology of the heart
- Medical disease processes and terminology
- Medical ethics and legal aspects of patient contact
- Electrocardiography and echocardiography
- An introduction to the components, function, and proper use of the EKG machine
- The normal anatomy of the chest wall for proper lead placement
- 12-lead placement and other practices

Education and National Certifications

- EKG Technicians should have or be pursuing a high school diploma or GED.
- There are no state approval and/or state requirements associated with this program.
- There are several EKG technician National Certification exams that are available to students who successfully complete this program:
 - **ASPT – Electrocardiograph (EKG) Technician exam**
 - **NHA Certified EKG Technician exam**

Clinical Externship / Hands on Training / Practicum

Although not a requirement of this program, once students complete the program they have the ability to participate in a clinical externship and/or hands on practicum so as to practice the skills necessary to perform the job requirements of a EKG Technician. Students will be assisted with

completing a resume and/or other requirements necessary to work in a hospital, physicians practice, clinic and/or with other healthcare organizations. All students who complete this program are eligible to participate in an externship and will be placed in a healthcare organization near their location.

EKG Technician Detailed Course Information:

- Role of the EKG technician
- Function of the EKG department in a variety of settings (hospital, clinic, office, etc.)
- Medical terminology related to electrocardiography
- Care and safety of patients including medical and legal aspects of patient care
- Anatomy and physiology of the cardiovascular system
- Electrophysiology, the conduction system of the heart, and the cardiac cycle
- Circulation of blood through the heart and vessels
- Lead placement for 12-lead electrocardiography
- Basic EKG interpretation of normal rhythms and arrhythmias
- EKG troubleshooting including recognizing artifacts
- Waves and measurements
- EKG strip analysis (P, Q, R, S, T wave-form interpretation)
- Identification of rhythms using the 12-lead EKG
- Pacemakers
- Holter monitoring and the echocardiogram

National Certification

Although there is no state approval, state registration or other state requirements for this program, students who complete this EKG Technician program will be prepared and are eligible to take at least 2 national certification exams. Students are eligible to sit for the American Society of Phlebotomy Technician (ASPT) Certified EKG Technician exam and the National Healthcareer Association (NHA) EKG Technician (CET) certification exam. Students who complete this program can and do sit for these national certification exams and are qualified, eligible and prepared to do so.

Course Overview

- Lesson 1 – Coronary Anatomy and Physiology
 - Reading Assignment: Chapter 1: pp. 1-12
- Lesson 2 – Electrophysiology
 - Reading Assignment: Chapter 2: pp. 13-34
- Lesson 3 – A Review of Lead Morphology and Placement
 - Reading Assignment: Chapter 3: pp. 35-46
- Lesson 4 – The Technical Aspects of the EKG
 - Reading Assignment: Chapter 4: pp. 47-60
- Lesson 5 – Calculating the Heart Rate
 - Reading Assignment: Chapter 5: pp. 61-72
- Lesson 6 – How to Interpret a Rhythm Strip
 - Reading Assignment: Chapter 6: pp. 73-78
- Lesson 7 – A Review of Rhythms Originating from the Sinus Node
 - Reading Assignment: Chapter 7: pp. 79-98
- Lesson 8 – A Review of Rhythms Originating from the Atria
 - Reading Assignment: Chapter 8: pp. 99-119

- Lesson 9 – A Review of Rhythms Originating in the Av Junction
 - Reading Assignment: Chapter 9: pp. 121-132
- Lesson 10 – Rhythms Originating on the Ventricles
 - Reading Assignment: Chapter 10: pp. 133-155
- Lesson 11 – AV Blocks
 - Reading Assignment: Chapter 11: pp. 157-176
- Lesson 12 – Performing Rhythms Practice Strips
 - Reading Assignment: Chapter 12: pp. 177-302
- Lesson 13 – A Review of Artificial Pacemakers
 - Reading Assignment: Chapter 13: pp. 303-317
- Lesson 14 – Diagnostic Electrocardiography
 - Reading Assignment: Chapter 14: pp. 319-345
- Lesson 15 – How to Interpret a 12-Lead EKG
 - Reading Assignment: Chapter 1: pp. 1-36
- Lesson 16 – Myocardial Infarction
 - Reading Assignment: Chapter 2: pp. 37-71
- Lesson 17 – Cardiac Medications and Electrical Therapy
 - Reading Assignment: Chapter 4: pp. 103-109

Fresno Pacific University Student Learning Outcomes (FPU-SLO)

FPU-SLO 1	Student Learning Outcomes Oral Communication: Students will <i>exhibit</i> clear, engaging, and confident oral communication – in both individual and group settings – and will critically <i>evaluate</i> content and delivery components.
FPU-SLO 2	Written Communication: Students will <i>demonstrate</i> proficient written communication by <i>articulating</i> a clear focus, <i>synthesizing</i> arguments, and utilizing standard formats in order to <i>inform</i> and <i>persuade</i> others.
FPU-SLO 3	Content Knowledge: Students will <i>demonstrate</i> comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
FPU-SLO 4	Reflection: Students will <i>reflect</i> on their personal and professional growth and <i>provide evidence</i> of how such reflection is utilized to manage personal and vocational improvement.
FPU-SLO 5	Critical Thinking: Students will <i>apply</i> critical thinking competencies by <i>generating</i> probing questions, <i>recognizing</i> underlying assumptions, <i>interpreting</i> and <i>evaluating</i> relevant information, and <i>applying</i> their understandings to new situations.
FPU-SLO 6	Moral Reasoning: Students will <i>identify</i> and <i>apply</i> moral reasoning and ethical decision-making skills, and <i>articulate</i> the norms and principles underlying a Christian world-view.
FPU-SLO 7	Service: Students will <i>demonstrate</i> service and reconciliation as a way of leadership.
FPU-SLO 8	Cultural and Global Perspective: Students will <i>identify</i> personal, cultural, and global perspectives and will employ these perspectives to <i>evaluate</i> complex systems.
FPU-SLO 9	Quantitative Reasoning: Students will accurately <i>compute</i> calculations and symbolic operations and <i>explain</i> their use in a field of study.

FPU-SLO 10	Information Literacy: Students will <i>identify</i> information needed in order to fully understand a topic or task, <i>explain</i> how that information is organized, <i>identify</i> the best sources of information for a given enquiry, <i>locate</i> and critically <i>evaluate</i> sources, and accurately and effectively <i>share</i> that information.
------------	--

Continuing Education Student Learning Outcomes (CE-SLO)

CE-SLO 1	Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
CE-SLO 2	Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
CE-SLO 3	Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
CE-SLO 4	Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
CE-SLO 5	Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.
CE-SLO 6	Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.