**FLORIDA VOCATIONAL INSTITUTE**

**SYLLABUS / LESSON PLAN**

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| **Daily/Weekly Lesson Plan Outline – 3 weeks / 30 Clock Hrs. / 30 Lab Hrs.** | | | | | |
| **COURSE TITLE** | | | | **Review Date:** | |
| **Medical Assistant** | | | | **01/04/2016** | |
| **CODE** | **SUBJECT** |  |  | **LEC HRS** | **LAB HRS** |
| **MAS 116** | **Specialized Medical Exams I (EKG/ECG)** | | | **30** | **30** |
| **COURSE DESCRIPTION: The course is designed to introduce basic principles of ECG. Students will be prepared to performed electrocardiogram procedure including the recording of the traces as well as ability to read them and recognize cardiac disorders.**  **Prerequisite:** None  **Required Resources:**  **Text Books:** Text: ECGs Made Easy. Barbara Aehlert, RN, BSPA. Fifth Edition. Elsevier  **Learning Resources Center materials are available**  **Instructional Methods:**  Lecture/Discussion  Audiovisual  Research  **Mode of Delivery:**  Residential  **Equipment**/**Technology/Software**  Utilization of power point presentations, media center websites, reference materials, and other technology as available  **Course objectives/Competencies: At the end of the course, students will be able to:**   * Record EKG traces as well as to read the recording. * Identify Heart disorders such as Myocardial Infarction, Hypertrophy, and Electrolyte imbalance by reading the 12 leads EKG * Identify Atrial, Junctional, and Ventricular Arrhythmias by reading the Lead II of the EKG * Recognize Artificial Pacemaker Rhythms * Identify Heart Blocks in the EKG trace | | | | | |
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|  | **Objectives to be covered** | **Lecture/ Labs** | **Method of Assessment** |
| **Week 1** |  |  |  |
| **Day 1** | Anatomy of the Heart | **Lecture:**   1. Explaining the Anatomy of the heart including chambers, valves, layers, septum and pericardium. 2. Describing the EKG department: The EKG machine, Stylus, Speed control, Sensitivity or gain 3. Explaining the Normal speed and sensitivity used to run an ECG 4. Explaining how to place the sensors to record an EKG. Special considerations when placing sensors on a patient with amputations. Grounding electrode. 5. Explaining the 12 leads of the EKG: Bipolar or standard leads, Augmented or unipolar leads, chest or precordial leads. 6. Demonstrating how to apply the EKG sensors and how to obtain a trace   **Laboratory**:  Students will practice how to place sensors and how to do an EKG | Laboratory practice |
| **Day 2** | Artifacts  Electrical System of the heart.  Cardiac Cycle  Measuring the EKG waves | **Lecture:**   1. Explaining the common kind of artifacts and the possible causes of each one: Muscle artifact, wandering baseline, AC artifact 2. Explaining the structures of the electrical system of the heart: Sinus Node, AV node, Bundle of His, Bundle Branches, and Purkinje Fibers. 3. Explaining the cardiac cycle: Systole and Diastole, Depolarization, Polarization and Repolarization. 4. Explaining the relation between the cardiac cycle and the waves of the ECG 5. Describing the EKG waves. 6. Explaining how to measure the ECG waves, segments and intervals 7. Explaining the normal ECG values and how to give diagnosis based on results obtained by measuring the EKG   **Laboratory:**  Taking EKG traces  Recognizing the ECG waves on the traces taken | Obtaining EKG traces |
| **Day 3** | Heart Rate  Sinus Rhythm  Sinus Block and Sinus Arrest | **Lecture:**   1. Explaining the definition of Heart Rate.: Factors that influence the rate, normal range for the adult rate, atrial and ventricular rate. 2. Explaining the difference between tachycardia and bradycardia 3. Explaining the different methods used to calculate the heart rate: The rate scale, the 6 seconds method. 4. Demonstrating how to calculate the rate using the traces taken in class 5. Characteristics of a Sinus Rhythm: Lead used to identify the heart rhythm. 6. Explaining how to recognize a Sinus Rhythm in the ECG: NSR, Sinus Tachycardia, Sinus Bradycardia and Sinus Arrhythmia. 7. Explaining the difference between Sinus Block and Sinus Arrest   **Laboratory:**  Taking EKG traces to measure the waves, calculate the rate and identify Sinus Rhythm.  Measuring the EKG waves, segments and intervals using the traces taken during previous laboratory activities | Measuring waves  Calculating Heart rate.  Laboratory |
| **Day 4** | Arrhythmias caused by ectopic focci  Main causes of Arrhythmias  Atrial Arrhythmias | **Lecture:**   1. Explaining the definition of Ectopic Focus and the main causes of arrhythmias initiated by ectopic areas in the heart. 2. Explaining the general characteristic of Atrial, Junctional and Ventricular arrhythmias that allow the EKG technician identify them in the EKG 3. Explaining the characteristics of PACs, PAT, and WAP and how to recognize them in the EKG.   **Laboratory:**  Students will identify PACs, PAT, and WAP in traces provided | Laboratory Practice  Quiz |
| **Week 2** |  |  |  |
| **Day 1** | Atrial Arrhythmias | **Lecture**   1. Explaining the characteristics of the Atrial Flutter and the clinical significance of this arrhythmia 2. Explaining the characteristics of Atrial Fibrillation. 3. Explaining the risks of Atrial Fibrillation 4. Explaining how to identify Atrial Flutter and Atrial Fibrillation in the EKG   **Laboratory:**  Identifying Atrial Flutter and Atrial Fibrillation in traces provided | Identifying Atrial Arrhythmias |
| **Day 2** | Junctional Arrhythmias | **Lecture:**   1. Explaining the characteristics of Junctional Escape Rhythm: High, Mid and Low junctional rhythm: Common rate of the AV node 2. Explaining the criteria used to identify Accelerated Junctional rhythm, Junctional Bradycardia.   **Laboratory:**  Guided Practice: Students will identify Junctional Escape Rhythm in the EKG | Reading traces |
| **Day 3** | Ventricular Arrhythmias | **Lecture:**   1. Explaining the characteristic of the P wave and the QRS complex in Ventricular Arrhythmias. 2. Explaining the characteristics of the Premature Ventricular Contractions (PVC) 3. Describing the clinical significance of the absent P in the Ventricular Arrhythmias 4. Explaining the classification of PVCs in uniform and multiform 5. Explaining the characteristics of VE pair, VE run, R on T Phenomenon and the patterned PVCs (Bigeminy, Trigeminy, and Quadrigeminy)   **Laboratory:**  Students will identify PVCs in traces provided  Taking EKG traces | Reading traces  Taking traces |
| **Day 4** | Ventricular Arrhythmias | **Lecture:**   1. Explaining the clinical significance of Ventricular tachycardia 2. Describing the ECG characteristics of Monomorphic and Polymorphic V.Tach. 3. Explaining the proper treatment in case of Ventricular Fibrillation 4. Explaining how to identify PVT, Torsade de Pointes, Coarse and Fine Ventricular Fibrillation in the EKG 5. Explaining the definition and main causes of Heart Blocks 6. Explaining the different kinds of AV blocks 7. Describing the presence of RSR complex in case of Bundle Branch Blocks 8. Explaining the clinical significance of Heart Blocks   **Laboratory:**  Identifying Ventricular Tachycardia in EKG traces provided  Identifying Heart Blocks in EKG traces provided | Laboratory practice  Reading traces |
| **Week 3** |  |  |  |
| **Day 1** | Coronary Artery Disease | **Lecture:**   1. Explaining the definition of CAD: Review of coronary circulation 2. Discussing the contributing factors for CAD including Diabetes, Hypertension, Atherosclerosis, Arteriosclerosis, and Obesity 3. Explaining the different kinds of Angina 4. Explaining the stages of the Myocardial Infarction: Ischemia, Injury and Necrosis 5. Explaining how to recognize MI in the EKG and how to classify the infarction in Anterior, lateral, inferior or posterior   **Laboratory:**  Identifying MI in traces provided | Book Exercise  Identifying MI in the EKG |
| **Day 2** | Axis and Hypertrophy | **Lecture:**   1. Explaining the definition of axis and the main causes of Axis deviation 2. Explaining the method used to find the position of the electrical axis 3. Describing the characteristics of the P wave in case of atrial hypertrophy as well as the leads used to identify it 4. Describing how to recognize ventricular hypertrophy in the EKG and the leads used to identify it. Use of the formula Sv1+ Rv5   **Laboratory:**  Identifying hypertrophy in EKG traces provided | Reading traces |
| **Day 3** | Electrolyte imbalance  Artificial Pacemakers | **Lecture:**   1. Explaining the meaning of the terms used to describe electrolyte imbalance 2. Explaining the contributing factors for Hyperkalemia and Hypokalemia 3. Demonstrating how to identify Potassium disturbances in the EKG: Waves of the EKG affected by potassium imbalance and the leads used to detect it. 4. Demonstrating how to use the QT interval to detect Calcium disturbances 5. Explaining the clinical significance of electrolytes imbalance in the EKG 6. Explaining the indications for artificial pacemakers-Explaining the different types of artificial pacemakers 7. Demonstrating how to recognize the presence of an artificial pacemaker in the EKG as well as how to identify Atrial pacemakers, Ventricular pacemakers, and sequential or bicameral pacemaker in the EKG 8. Explaining the meaning of the terms: Pacemaker in Capture, Failure to Capture, and failure to sense. 9. Review for the Final Test | Questions answers |
| **Day 4** | Final Test | 1. Written Test 2. Practical Test 3. Analysis of Test results 4. Giving feedback | Practical Test  Written Test |

**Qualitative Measure of Satisfactory Academic Progress (SAP)**

The qualitative element used to communicate Satisfactory Academic progress is the institutions published grading scale. Theory is evaluated after each unit of study. Students must maintain a cumulative theory grade average of at least 70% (C) at the end of each progress report period. Students must make up failed or missed tests and incomplete assignments. Practical skills performances are counted toward course completion. If performance does not meet satisfactory academic requirements, demonstration of the skills must be repeated until a satisfactory level of performance is achieved.

The school’s satisfactory academic progress policies must contain a Pace (quantitative) measure. The policy defines the pace at which our students must progress to ensure educational program completion within the maximum timeframe of 150%. For Florida Vocational Institute the maximum time frame is no longer than 150% of the published length of the educational programs as measured in the cumulative number of clock hours the student is required to complete.

The school uses the following grading scale:

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| **Letter** | **Number** | **Grade Point** |
| **A** | 100 - 90% | 4.0 |
| **B** | 89 - 80% | 3.0 |
| **C** | 79 - 70% | 2.0 |
| **D** | 69 - 60% | 1.0 |
| **F** | Below 60% | 0.0 |
| **I** | Incomplete | Withdraw / No Grade |

*Not Used in GPA computation: I = Incomplete; W = Withdraw; P = Pass; NP = Not Pass*

Pass - Satisfactory completion of non-graded Externship.

Fail - Unsatisfactory completion of non-graded Externship.

The students who have failed to meet the Qualitative standards are placed first on Financial Aid Warning; if no improvement over the next payment period, the student will be placed on academic suspension, with a loss of Title IV, HEA fund and they appeal the decision. Please review the appeal and probation requirements state in this policy for guidance on this process. The Director of Financial Aid in coordination with the Office of Academic Affairs monitors qualitative progress.

**Final grade calculation criteria**

Q= 20 %

CA= 10%

MT= 30%

F= 40%

FG= 100%

**Evaluation Record Code**

Q= Quizzes

CA=Class Activity

MT= Mid Term

F= Final

R= Retest

FG= Final Grade

**Attendance**

Regular attendance is required of all students. Promptness and dependability are qualities important in all occupations. Students should begin to develop these qualities and habits the day the students begin their training.

Attendance is taken daily in class by the instructor and submitted to the Registrar before the end of each class day. Students are expected to attend all scheduled class meetings and to arrive on time.  Attendance records will be maintained by the Registrar and will be part of the student’s permanent academic record.

Students with chronic absences in excess of 20% of the scheduled hours for a course will receive a failing grade for the course. Early departures and tardies will be calculated in quarter hour increments. A student will be withdrawn from any course or program if he/she does not attend within a 14 consecutive calendar day period (excluding school holidays or breaks, no longer than 5 consecutive days).  All students must complete a 100% of all externship or clinical hours within the assigned grading period.

Students are responsible for making up assignments and work missed as a result of absence at the discretion of the instructor. The instructor may assign additional outside make-up work to be completed for each absence. Students enrolled in clock hour programs will be required to attend make up classes for any missed hours scheduled by the instructor if the students has missed more than **10%** of scheduled hours.  Students enrolled in a clock hour program must attend a minimum of **85 %** of the scheduled program hours in order to graduate.

Attendance is reviewed by the instructors, program directors and the Director of Education on a weekly basis with a focus on those who have been absent for **10%** of the scheduled course hours. Students will be notified by phone, text or e-mail if their attendance is danger of violating attendance requirements.

Students may appeal the school’s actions related to the attendance policy if the absence was due to extenuating or mitigating circumstances, for example illness, military duty, death of a family member, court appearances or jury duty. The student should first discuss the issue with his or her instructor. Appeals must be received within **seven (7)** calendar days of the student being notified of the decision that he or she wishes to appeal.

Students are expected to inform faculty in advance of any pending dates where a student may be absent and should make every effort to attend the alternate class in the morning or evening. Students are only allowed to miss up to 15% of their entire program hours, anything in excess of the 15% needs to be made up and could impact the student final course grade. It is the responsibility of the student to make up work or time missed.

**MAKE –UP HOURS/TIME**

Students enrolled in clock hour programs will be required to attend make up classes for any missed clock hours scheduled if the students has missed more than 15% of scheduled hours.  Students enrolled in a clock hour program must attend a minimum of 85 % of the scheduled program hours in order to graduate. Make-up hours for class must be made up during alternative schedules, including daytime, evening or a Friday schedule. Special circumstances will be managed by the Program Director with approval from Campus Vice President.

If absence at any time during the program exceeds **more than 10%,** the student will be placed on a mandatory prescribed school schedule which may include attending Friday scheduled sessions.

**MAKE-UP CLASS WORK**

Arrangements to make-up assignments, project, test, and homework missed as a result of absence must be made with the approval of the instructor. Make-up work must be completed within ten (10) calendar days after the end of the module

**DRESS CODE**

1. While on campus and in lectures, students must wear uniform and footwear appropriate for the college learning environment. The student should demonstrate appropriate hygiene to avoid offensive odor.
2. In the student laboratory, appropriate clothing must be worn at all designated times as per the specific course syllabus. Close-toed shoes must be worn in the lab at all times.
3. During clinical rotation, the student must adhere to the dress code of the facility to which he/she is assigned. In addition to the facility’s dress code, or if the dress code is optional, the following rules apply:
   1. Students must comply with number 2 above. If the facility requires the student to wear a scrub uniform, it must be school’s uniform. The student is responsible for purchasing the correct scrub uniform. The student must wear their Student ID batch at all times.
   2. Students must not wear clothing made of denim material of any color. (No jeans or JEAN skirts, etc.)
   3. Students must not wear under t-shirts, unless they are of one color with no words, letters, slogans, graphics, etc., of any kind
   4. Students must wear closed-toe shoes (no sandals or canvas shoes) with socks or hosiery.
   5. While attending practicum rotations, student’s hair must be clean, neat and of a normal hair color. Male students must either shave regularly, or if they choose to wear a mustache and/or beard, they must keep them clean and well groomed.
   6. Before attending practicum rotation, students must bathe regularly to avoid offensive odor. In addition, students must refrain from use of cologne/perfume/aftershave lotion, or makeup.
   7. Keep fingernails clean and at a reasonable length.
   8. Students not conforming to the dress code of the facility or the program may be sent home from the practicum site at the preceptor’s or course instructor’s discretion and attendance won’t be granted.

**Cell Phones and Pagers**

No student will be called out of class for a telephone call, except in case of an emergency. It is suggested that family friends be informed of this rule. Phones will not be in used inclass.