Health Science: Diagnostic Services

Career Pathway Plan of Study for ▶ Learners ▶ Parents ▶ Counselors ▶ Teachers/Faculty

*This Career Pathway Plan of Study (based on the Diagnostic Services Pathway of the Health Science Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. *This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.*

EDUCATION LEVELS	GRADE	English/ Language Arts	Math	Science	Social Studies/ Sciences	Other Required Courses Other Electives Recommended Electives Learner Activities	*Career and Technical Courses and/or Degree Major Courses for Diagnostic Services Pathway
	Interest Inventory Administered and Plan of Study Initiated for all Learners						
SECONDARY	9	English/ Language Arts I	Algebra I	Biology	State History Civics	All plans of study should meet local and state high school graduation requirements and college entrance requirements. Certain local student organization activities are also important including public speaking, record keeping and work-based experiences. A foreign language is recommended.	• Health Science I: Introduction to Health Science • Information Technology Applications
SECONDARY	10	English/ Language Arts II	Geometry	Chemistry	U.S. History		• Health Science II: Health, Safety and Ethics in the Health Environment
SECONDARY	11	English/ Language Arts III	Algebra II	Physics or other science course	World History Sociology		• Health Science III: Employment in Health Occupations
	College Placement Assessments-Academic/Career Advisement Provided						
SECONDARY	12	English/ Language Arts IV	Pre-Calculus or Calculus or Statistics	Anatomy and Physiology	Psychology Economics		• Health Science IV: Introduction to Diagnostic Services
	Articulation/Dual Credit Transcripted-Postsecondary courses may be taken/moved to the secondary level for articulation/dual credit purposes.						
POSTSECONDARY	Year 13	English Composition	Algebra	Chemistry Biological Science	American Government Psychology	All plans of study need to meet learners' career goals with regard to required degrees, licenses, certifications or journey worker status. Certain local student organization activities may also be important to include. Work-based learning is an integral part of this pathway.	• Health Science V: Diagnostic Services Preparation
POSTSECONDARY	Year 14	Speech/ Oral Communication Technical Writing	Statistics or Calculus	Microbiology	American History Sociology		• Continue Courses in the Area of Specialization
POSTSECONDARY	Year 15	Continue courses in the area of specialization.					
POSTSECONDARY	Year 16						• Complete Diagnostic Services Major (4-Year Degree Program)

SAMPLE Occupations Relating to This Pathway

Occupations Requiring Less than Baccalaureate Degree

- Cardiovascular Technologist
- Central Supply Technician
- Clinical Lab Technician
- Computer Tomography (CT) Technologist
- Diagnostic Medical Sonographer
- Electrocardiographic (ECG) Technician
- Histotechnician
- Magnetic Resonance (MR) Technologist
- Mammographer
- Nuclear Medicine Technologist
- Pathology Assistant
- Phlebotomist
- Positron Emission Tomography (PET) Technologist
- Radiologic Technologist/ Radiographer

Occupations Requiring Baccalaureate Degree

- Cytogenetic Technologist
- Cytotechnologist
- Exercise Physiologist
- Geneticist
- Histotechnologist
- Medical Technologist/Clinical Laboratory Scientist
- Nutritionist
- Pathologist
- Radiologist

League for Innovation in the Community College CCTI College and Career Transitions Initiative

Project funded by the U.S. Department of Education (VO51B020001)

SAMPLE

SAMPLE

Creating Your Institution's Own Instructional Plan of Study

With a team of partners (secondary/postsecondary teachers and faculty, counselors, business/industry representatives, instructional leaders, and administrators), use the following steps to develop your own scope and sequence of career and technical courses as well as degree major courses for your institution's plan of study.

1. Crosswalk the Cluster Foundation Knowledge and Skills (available at **http://www.careerclusters.org/goto.cfm?id=89**) to the content of your existing secondary and postsecondary programs/courses.

2. Crosswalk the Pathway Knowledge and Skills (available at **http://www.careerclusters.org/goto.cfm?id=38**) to the content of your existing secondary/postsecondary programs and courses.

3. Based on the crosswalks in steps 1 and 2, determine which existing programs/courses would adequately align to (cover) the knowledge and skills. These programs/courses would be revised to tighten up any alignment weaknesses and would become a part of a sequence of courses to address this pathway.

4. Based on the crosswalks in steps 1 and 2, determine what new courses need to be added to address any alignment weaknesses.

5. Sequence the **content** and **learner outcomes** of the existing programs/courses identified in step 3 and new courses identified in step 4 into a course sequence leading to preparation for all occupations within this pathway. (See list of occupations on page 1 of this document.)

6. The goal of this process would be a series of courses and their descriptions. The names of these courses would be inserted into the *Career and Technical Courses* column on the Plan of Study on page 1 of this document.

7. The SAMPLE on page 4 is a **sample result** of steps 1-6, and these course titles are inserted into the Plan of Study on page 1 of this document.

8. Crosswalk your state academic standards and applicable national standards (e.g., for mathematics, science, history, language arts, etc.) to the sequence of courses formulated in step 6.

SAMPLE

Health Science: Diagnostic Services

SAMPLE Sequence of Courses for ▶ Instructional Leaders ▶ Administrators ▶ Counselors ▶ Teachers/Faculty

SAMPLE

Below are suggested courses that could result from steps 1-6 above. However, as an educational institution, course titles, descriptions and the sequence will be your own. This is a good model of courses for you to use as an example and to help you jump-start your process. Course content may be taught as concepts within other courses, or as modules or units of instruction.

These suggested instructional content sequences are organized as cumulative knowledge and skills specific for health science programs of study. Health Sciences I-III incorporate the basic knowledge and skills necessary for all healthcare occupations. Health Science IV is specific to a selected health science career pathway. The instructional content may be organized into courses consistent with the high school configuration. Health Science V includes instructional content necessary for career entry and is most often offered at a college or university level.

The following courses are based on the Cluster Foundation Knowledge and Skills found at http://www.careerclusters.org/goto.cfm?id=89. These knowledge and skills are reinforced and enhanced through participation in Health Occupations Students of America and work-based learning opportunities that are age and grade appropriate.

#1

Health Science I: Introduction to Health Science: Instructional content will focus on healthcare communications, leadership and teamwork, and will reinforce, expand and enhance biology content specific to human structure and function. Instruction will use interest inventories and observations to introduce students to careers in healthcare and will incorporate project- and problem-based healthcare practices and procedures to demonstrate the criticality of these knowledge and skills. This course will build an understanding of the academic, communication and technical skills in all aspects of the industry. Students will learn how healthcare workers fit within the overall healthcare environment and will identify how key systems affect quality of care and other services they perform.

#2

Information Technology Applications: This course is designed for those students who have not mastered knowledge and skills related to technology applications prior to entry into high school. Students will use technology tools to manage personal schedules and contact information, create memos and notes, prepare simple reports and other business communications, manage computer operations and file storage, and use electronic mail, Internet applications and GIS to communicate, search for and access information. Students will develop skills related to word processing, database management and spreadsheet applications.

#3

Health Science II: Health, Safety and Ethics in the Health Environment: Instructional content will focus on healthcare safety, health maintenance practices, environmental safety processes and procedures, and ethical and legal responsibilities as well as reinforce, expand and enhance biology content specific to diseases and disorders. Instruction will incorporate project- and problem-based healthcare practices and procedures to demonstrate the criticality of these knowledge and skills. Students will develop basic technical skills required for all health career specialties including understanding occupational safety techniques and obtaining their CPR and First Aid certifications.

#4

Health Science III: Employment in Health Occupations: Instructional content will focus on healthcare information technology applications, employability and career development, and technical skill preparation. These knowledge and skills will provide guidance for career selection and application for both entry-level employment and postsecondary preparation. Instruction will incorporate project- and problem-based healthcare practices and procedures to demonstrate the criticality of these knowledge and skills.

The following courses expose students to Cluster Pathway Knowledge and Skills found at http://www.careerclusters.org/goto.cfm?id=38. These knowledge and skills are reinforced and enhanced through participation in Health Occupations Students of America and work-based learning opportunities that are age and grade appropriate.

#5

Health Science IV: Introduction to Diagnostic Services: Instructional content will introduce students to diagnostic services career options and opportunities, accompanying educational requirements, employment projections, diagnostic assessment and reporting, positioning, transferring and transporting of patients, and procedure implementation. Instructional content will enhance, expand and reinforce multidisciplinary communication and patient interaction as introduced in Health Science I. With input and participation of diagnostic services professionals, instructional content will incorporate project- and problem-based diagnostic services practices and procedures to demonstrate the criticality of these knowledge and skills.

#6

Health Science V: Diagnostic Services Preparation: Instructional content for the diagnostic services major will be consistent with industry practices and protocols (specific to career selection) and licensure, certification and degree requirements. Students will study procedures for communicating information, using both oral and written communications skills, within a healthcare environment and for conveying this information to appropriate departments and other professionals in a timely manner. Students will study processes to assess and report health status of patients; learn the principles of body mechanics for positioning, transferring and transporting of patients; and practice performing these procedures without injury to the patient or themselves. Students will learn the concepts for how diagnostic service professionals should accurately and effectively explain procedures and goals to the patient. Students will study a variety of strategies used to respond to questions and concerns of the patient. They also will learn how to appropriately respond to requests for procedures, interpret the requests and plan implementation of services as well as prepare for specific procedures. Students will learn how diagnostic services professionals interpret any given procedure, become knowledgeable of each procedure, and perform the specific procedures to create diagnostic results. This course provides students the opportunity to practice how diagnostic service professionals apply the principles of quality assurance/performance improvement as applied to the specific disciplines as well as practice reporting in a timely manner.

Health Science

Notes