

Biomedical Informatics Technician

Associate in Applied Science (AAS)

Overview

The Biomedical Informatics Technician program prepares individuals to be job-ready for the continued emerging world of electronic, comprehensive health record management and application.

Biomedical informatics technicians use computer programs and established methods to securely process, compile, maintain and report electronic health information data for patient care, reimbursement, facility planning, marketing, risk management, utilization management, quality assessment and research.

Students will learn to abstract and code clinical data using proper classifications systems and analyze health records according to established protocols and standards. Biomedical informatics technicians may also be responsible for supervision of the various components of the health information system.

Students are required to purchase a subscription to the American Health Information Association's Virtual Lab when registering for the following 530 courses: Medical Records, Electronic Medical Records, Organization of Healthcare, Health Data Analysis and Performance Improvement, Advanced Coding and Clinical Experience. The subscription provides the student with access to software and data needed for lab activities. Lab subscription cost is \$75 for the academic year or \$50 per semester. The subscription packets are obtained directly from AHIMA. <https://secure.ahima.org/VLab/Login.aspx>

The Biomedical Informatics Technician program is offered at MSTC's Marshfield campus. However, most classes are offered online so they are largely not location-dependent.



Program Outcomes

Employers will expect you, as a Biomedical Informatics Technician graduate, to be able to:

- Demonstrate principles of integrity, ethics, and respect
- Use information technology to securely process, compile, maintain, and report electronic health information data
- Plan for the exchange of healthcare information by assisting providers in the utilization of portable and other devices for data entry/retrieval or medical decision-making
- Abstract and code clinical data using proper classification systems
- Analyze health records according to established protocols and standards
- Supervise various components of the health information system
- Support data collection and reimbursement systems

Career Options

Biomedical Informatics Technician
Clinical Informatics Technician
Coding Specialist
Health Informatics Technician
Health Information Supervisor
Medical Informatics Technician

Potential for Advancement

Health Information Manager/Director
Potential advancement generally requires further education.

Admissions Procedures

To apply to the Biomedical Informatics Technician program, please submit the following to MSTC Student Affairs Admissions Office:

1. WTCS application form and \$30 non-refundable application fee
2. Completed Accuplacer test. (Other test scores may be acceptable alternatives.) Entrance exam requirements for the Biomedical Informatics Technician program are:
 - Reading–Accuplacer score of 89 or equivalent
 - Language–Accuplacer score of 103 or equivalent
 - Math–Accuplacer score of 79 or equivalent

If a student does not meet the required scores in these academic areas, they may remediate and retest or complete an identified structured remediation course(s) in the Academic Support Center. To progress in the program, students must achieve an 80% or greater in all preceding courses.

3. High school transcript or GED/HSED scores
4. Completed Background Information Disclosure (BID) Form. Placement in Clinical Experience may require a Caregiver Background Check.

Mid-State Technical College
Admissions
500 32nd Street North
Wisconsin Rapids, WI 54494
mstc.edu
888.575.MSTC

Program Course Descriptions

10103106

Microsoft Office-Beginning 3 credits

Develops introductory skills in the Microsoft Office Suite (Word, Excel, Access, PowerPoint), Windows Explorer, Internet and computer concepts through demonstrations and lab exercises.

10152105

Database Management 3 credits

This course uses hands-on exercises and projects to give students experience with using databases for data storage and retrieval. To encourage students to become more sophisticated database users, background information, general relational database design concepts and a database security overview are included. Prerequisite: Microsoft Office Beginning 10103106

10196180

Applied Data Analysis 3 credits

This course provides the student with the tools and skills to collect and analyze data allowing them to solve problems and improve processes. An emphasis will be placed on the use of statistical techniques to create and implement a data collection plan. Statistical techniques emphasized will be process mapping, failure mode and effects analysis, probability, confidence intervals, measurement systems analysis and hypothesis testing. Prerequisite: Introductory Statistics 10804189

10196191

Supervision 3 credits

The learner applies the skills and tools necessary to perform the functions of a contemporary frontline leader. Students engage in operational planning, analyze organizational structures, review the staffing process, employ techniques to enhance employee personal and group effectiveness, and develop control techniques to measure effectiveness in the above areas.

10196192

Managing for Quality 3 credits

The learner applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identify stakeholder relationships, identify ways to meet/exceed customer expectations, apply a systems-focused approach, use quality models and tools, manage a quality improvement project and measure effectiveness of continuous improvement activities.

10501101

Medical Terminology 3 credits

Students focus on the component parts of medical terms: prefixes, suffixes and word roots. Students will practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

10501122

Pharmacology for Allied Health 2 credits

Introduces students to classifying medications into correct drug categories and applying basic pharmacology principles. Students apply basic pharmacodynamics to identifying common medications, medication preparation and administration of medications used by the major body systems.

10530111

Medical Records 3 credits

Focuses on the purpose, format, content, use, confidentiality and administrative issues of a patient's medical history and care. Students will study the use of the patient's medical record as a basis for planning patient care, documenting communication between the healthcare provider and any other health professional contributing to the patient's care, assisting in protecting the legal interest of the patient and the health care providers responsible for the patient's care, and documenting the care and services provided to the patient. Emphasis is placed on accuracy, organization and confidentiality. Students will be introduced to EMR concepts. Corequisite: Medical Terminology 10501101

10530122

Electronic Medical Records 4 credits

Course introduces students to the electronic medical record (EMR) as a technology-based representation of healthcare data integration from a participating collection of varied systems for a single patient. Course covers emerging use of the electronic medical record, an overview of EMR, applications, benefits and barriers to its use, ontologies, vocabularies, principles of implementation, health information exchange, standards, privacy, security, information retrieval, digital libraries and image management. This course also examines regulations for the content, use, confidentiality, disclosure and retention of health information. Prerequisites: Medical Terminology 10501101; General A & P 10806177; Medical Records 10530111 Corequisite: Human Diseases for Health Professions 10530182

Curriculum

First Semester (16 Credits)

10103106	Microsoft Office-Beginning	3
10501101	Medical Terminology	3
10530111	Medical Records	3
10801195	Written Communication	3
10806177	General Anatomy & Physiology	4

Second Semester (18 Credits)

10196192	Managing for Quality	3
10530122	Electronic Medical Records	4
10530125	Organization of Healthcare	2
10530182	Human Diseases for the Health Professions	3
10801197	Technical Reporting	3
10804189	Introductory Statistics	3

Third Semester (17 Credits)

10152105	Database Management	3
10196180	Applied Data Analysis	3
10196191	Supervision	3
10501122	Pharmacology for Allied Health	2
10530133	ICD-9-CM Coding for Biomedical Informatics Technicians	3
10530134	Health Data Analysis and Performance Improvement	3

Fourth Semester (18 Credits)

10530143	Clinical Experience	1
10530144	CPT Coding for Biomedical Informatics Technicians	3
10530146	Private and Government Reimbursement	3
10530148	Advanced Coding	2
10809166	Intro to Ethics: Theory & Application	3
10809196	Intro to Sociology	3
10809198	Intro to Psychology	3

Total Credits 69

Please Note:

- The Biomedical Informatics Technician program has August and January starting dates. However, we advise you to meet with a counselor to successfully plan your academic schedule.
- Degree completion time may vary based on student scheduling needs and course availability.
- For General Education course descriptions (800 level courses), see section marked under Course Descriptions.

Biomedical Informatics Technician (Continued)

10530125

Organization of Healthcare 2 credits

This course examines the organization and delivery of health care services, external standards, regulations, initiatives, payment and reimbursement systems and healthcare providers and disciplines.

10530133

ICD-9-CM Coding for Biomedical Informatics Technicians 3 credits

Course covers the basis for classifying and indexing diagnoses and procedures for the purposes of standardization, retrieval and statistical analysis. Also used as the basis for payment, research, policy setting, quality improvement, healthcare management and other applications. Prepares students to assign ICD-9-CM codes supported by medical documentation with entry-level proficiency. Students apply ICD-9-CM instructional notations, conventions, rules and official coding guidelines when assigning ICD-9-CM codes to case studies and actual medical record documentation. Course includes mapping applications to facilitate transition to ICD-10-CM which will allow for tracking bio-terrorism events and other public health outbreaks. Prerequisites: Medical Terminology 10501101; General A & P 10806177; Human Diseases for Health Professions 10530182; Medical Records 10530111

10530134

Health Data Analysis and Performance Improvement 3 credits

This course introduces the collection, computation, analysis and presentation of healthcare statistical data. It also studies healthcare performance improvement systems including risk management, utilization management and quality assessment. Prerequisites: Electronic Medical Records 10530122; Organization of Healthcare 10530125; Introductory Statistics 10804189; Managing for Quality 10196192

10530143

Clinical Experience 1 credit

This course provides a blend of supervised clinical experience in healthcare facilities or virtual practice with some classroom activity. Students will apply skills and knowledge gained from previous courses. Classroom activity will cover discussion of clinical situations. Prerequisite: Health Data Analysis and Performance Improvement 10530134; Corequisites: Private and Government Reimbursement 10530146, Advanced Coding 10530148

10530144

CPT Coding for Biomedical Informatics Technicians 3 credits

Prepares learners to assign current procedural terminology (CPT) codes supported by medical documentation with entry-level proficiency. Students are familiar with and use standard coding references. Emphasis is placed on accuracy, CPT instructional notations, conventions, rules and official coding guidelines when assigning CPT codes to case studies, and actual medical record documentation. Application of modifiers to services and relationship to financial impact is also covered. Prerequisites: Medical Terminology 10501101; General A & P 10806177; Human Diseases for Health Professions 10530182; Medical Records 10530111

10530146

Private and Government Reimbursement 3 credits

Introduces students to the vocabulary of government and private based healthcare reimbursement. Students will identify and compare the varieties of private healthcare insurance including the advantages and disadvantages of each for the provider and for the policyholder. Learners assign Diagnosis Related Groups (DRGs), Ambulatory Payment Classifications (APCs), and Resource Utilization (RUGs) with entry-level proficiency using computerized encoding and grouping software. HIPAA guidelines are utilized throughout. Corequisites: ICD-9-CM Coding for BIT 10530133; CPT Coding for BIT 10530144

10530148

Advanced Coding 2 credits

This course builds on basic coding knowledge and skills by providing the student with coding of clinical case studies and actual medical records. The student will access, review and code electronic medical records from the Academic EHR System. Students will also perform data quality reviews to validate code assignment and compliance with reporting requirements. Prerequisite: ICD-9-CM Coding for BIT 10531133; Corequisites: CPT Coding for BIT 10530144, Private and Government Reimbursement 10530146

10530182

Human Diseases for the Health Professions 3 credits

This course focuses on the common diseases of each body system as encountered in all types of healthcare settings by health information professionals. Emphasis is placed on understanding the etiology (causes), signs and symptoms, diagnostic tests and treatment (including pharmacologic) of each disease. Prerequisites: Medical Terminology 10501101; General A & P 10806177