

BIOMEDICAL INFORMATICS TECHNICIAN



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

Cancer Registrar
Coding Specialist
Data Quality Analyst
Diagnosis Related Group (DRG) Coordinator
Health Informatics Technician
Health Information Supervisor
Medical Records Analyst

Program Code 10-530-2

Expected Program Costs: \$10,400

Median Annual Salary: \$29,000

OVERVIEW

The Biomedical Informatics Technician (BIT) program prepares individuals to be job-ready for the 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.

The BIT program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

Six Sigma Green Belt certification can be achieved by completing the following courses (three of which are required in the program): Managing for Quality, Introductory Statistics, Applied Data Analysis, Project Management and the Green Belt certification course.

Students are required to purchase a subscription to the American Health Information Management Association's (AHIMA) Virtual Lab when registering for the following 530 courses: Medical Records, Electronic Medical Records, CPT Coding for Biomedical Informatics Technicians, 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 \$85 for the academic year or \$60 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 and are not location dependent.

Patient Account Representative
Patient Financial Services Specialist
Quality Improvement Analyst

POTENTIAL FOR ADVANCEMENT

Health Information Manager/Director

Potential advancement generally requires further education.

ADMISSIONS PROCEDURES

To apply to the Biomedical Informatics Technician (BIT) program, please complete the following steps and submit documents to the MSTC Admissions Office:

Step 1:

1. Complete an MSTC application form and return it with the \$30 non-refundable application fee.

2. Complete the Accuplacer or ACT test. Minimum scores required:

- Reading-Accuplacer score of 55
- Sentence Skills-Accuplacer score of 60
- Math-Accuplacer score of 34
- ACT equivalents for above scores are acceptable.

If a student does not meet the required test scores, they may retest or complete an identified structured course(s) in the Academic Support Center.

- Written Communication, courses in mathematics and some science courses have placement requirements. Please refer to the course description section in the back of the catalog, listed under General Education, for course specific information.

3. Submit an official copy of all academic transcripts, including high school, college or university and HSED/GED.
4. Complete a Background Information Disclosure (BID) form and submit \$15 for Caregiver Background check. The Wisconsin Caregiver Law requires a background check. This form is available at <http://www.mstc.edu/pdf/BIDform.pdf>.
5. Complete the online program information session found on MSTC's website to learn about the profession, academic requirements and impact on one's personal life.

When the requirements for Step 1 are completed, the student will be conditionally admitted to the program and may be eligible for financial aid.

Step 2:

To be eligible to enroll in second semester BIT core courses, complete the following requirements:

1. Complete Intro to Reading and Study Skills with a grade of "C" or better, an Accuplacer Reading score of 89 or higher, or ACT equivalent.
2. Complete Written Communication with a grade of "C" or better, an Accuplacer Sentence Skills score of 103 or higher, or ACT equivalent.
3. Complete Pre-Algebra with a grade of "C" or better, an Accuplacer Math score of 79 or higher, or ACT equivalent.
4. Complete one year of high school chemistry or biology with a grade of "C" or better both semesters or one semester of college chemistry or biology with a grade of "C" or better.
5. Complete the Intent to Enroll form and submit proof of completion of all requirements to MSTC Admissions Office.

CLINICAL RELATED REQUIREMENTS

Clinical sites have the right to refuse a student's admission based on pending charges and conviction records. If you have a criminal history, you may not be able to complete clinical courses. MSTC will make two attempts to place a student in a clinical experience.

Prior to beginning a clinical experience in a health care facility, students must:

- a. Provide evidence of good health by completion of required health work.
- b. Provide evidence of current CPR.
- c. Accept responsibility for clinical assignment(s) regardless of time and location, including transportation and other personal arrangements.

Contact the program counselor for more details.

PROGRAM PROGRESSION

In order to maintain a passing status and progress in the program, students must:

- Receive a grade of "C" or better in all core, general education and transfer courses.
- Maintain a program GPA of 2.0 or higher.

If a student is not successful in a 10-530 core course, he/she will need to repeat that course prior to progressing in the program. Potential continuation is dependent upon availability in the course/program.

Students have two attempts to pass each 10-530 course. If a passing grade is not achieved in two attempts, the student will be withdrawn from the program. A withdrawal grade of "W" counts as one attempt for the course. Requests for special consideration may be directed to the Service & Health Associate Dean.

CURRICULUM

Term	(17 credits)
10103107 Applied Microsoft Office for Health	2
10501101 Medical Terminology	3
10530111 Medical Records	3
10530125 Organization of Healthcare	2
10801195 Written Communication	3
10806177 General Anatomy & Physiology	4

Term	(18 credits)
10196192 Managing for Quality	3
10501108 Pharmacology for Allied Health	2
10530122 Electronic Medical Records	4
10530182 Human Diseases for the Health Professions	3
10530197 ICD Diagnosis Coding	3
10804189 Introductory Statistics	3

Term	(17 credits)
10152105 Database Management	3
10196180 Applied Data Analysis	3
10530134 Health Data Analysis and Performance Improvement	3
10530144 CPT Coding for Biomedical Informatics Technicians	3
10530199 ICD Procedure Coding	2
10801197 Technical Reporting	3

Term	(18 credits)
10196191 Supervision	3
10530143 Clinical Experience	1
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 70

Please Note:

- The Biomedical Informatics Technician program has August and January start dates. We advise you to meet with an academic advisor or counselor to successfully plan your academic schedule.
- This curriculum sequence is only for student planning. Actual student schedules will vary depending on course availability.
- Degree completion time may vary based on student scheduling and course availability.
- For General Education course descriptions (800 level), see section marked under Course Descriptions.

**Mid-State Technical College
Admissions
500 32nd Street North
Wisconsin Rapids, WI 54494**

BIOMEDICAL INFORMATICS TECHNICIAN

PROGRAM COURSE DESCRIPTIONS

10103107 // 2 credits

Applied Microsoft Office for Health

Develops introductory computer and software application skills using the Windows Operating System and Microsoft Office Suite (Word, Excel, and Access), Outlook, and Internet Explorer through demonstrations and lab exercises.

Emphasizes technical skills in Excel workbooks and Access databases for health careers.

10152105 // 3 credits

Database Management

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 - Introduction 10103106 or Applied Microsoft Office for Health 10103107

10196180 // 3 credits

Applied Data Analysis

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 // 3 credits

Supervision

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.

10501101 // 3 credits

Medical Terminology

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.

10501108 // 2 credits

Pharmacology for Allied Health

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.

10196192 // 3 credits

Managing for Quality

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.

10530111 // 3 credits

Medical Records

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 // 4 credits

Electronic Medical Records

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, as 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 Anatomy & Physiology 10806177; Medical Records 10530111

10530125 // 2 credits

Organization of Healthcare

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

10530134 // 3 credits

Health Data Analysis and Performance Improvement

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 and Introductory Statistics 10804189; Corequisite: Managing for Quality 10196192

10530143 // 1 credit

Clinical Experience

This course provides a blend of supervised clinical experience in health care 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 // 3 credits

CPT Coding for Biomedical Informatics Technicians

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 Anatomy & Physiology 10806177; Human Diseases for Health Professions 10530182; Medical Records 10530111

10530146 // 3 credits

Private and Government Reimbursement

Introduces students to the vocabulary of private or voluntary-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) DRG's, Ambulatory Payment Classifications (APC's), and Resource Utilization (RUG's) with entry-level proficiency using computerized encoding and grouping software. HIPAA guidelines are utilized throughout.

Prerequisites: ICD Diagnosis Coding 10530197; ICD Procedure Coding 10530199; CPT Coding for BIT 10530144

10530148 // 2 credits

Advanced Coding

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.

Prerequisites: ICD Diagnosis Coding 10530197, ICD Procedure Coding 10530199, and CPT Coding for BIT 10530144; Corequisite: Private and Government Reimbursement 10530146

10530182 // 3 credits

Human Diseases for the Health Professions

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 Anatomy & Physiology 10806177

10530197 // 3 credits

ICD Diagnosis Coding

Prepares students to assign ICD diagnosis codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation.

Prerequisites: Medical Terminology 10501101; Medical Records 10530111; General Anatomy & Physiology 10806177; Human Disease for the Health Professions 10530182

10530199 // 2 credits

ICD Procedure Coding

Prepares students to assign ICD procedure codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation.

Prerequisites: Medical Terminology 10501101; Medical Records 10530111; General Anatomy & Physiology 10806177; Human Disease for the Health Professions 10530182