

**Second Year, Fall Semester**

PHY 231, HUM 131, MACRAO Social Science course, Electives

**Second Year, Winter Semester**

PHY 232, MACRAO Social Science course, Electives

**ENGINEERING**

Engineers apply science, mathematics, and professional judgment to solve technical problems in industry and society. Today engineers are expected to contribute more than their technical competence. They are concerned with the impact of their work on society.

**SAMPLE CURRICULUM FOR ENGINEERING****First Year, Fall Semester**

ENG 131, MTH 151, CEM141, CPS 175\*, EGR 153\*\*

**First Year, Winter Semester\*\*\***

ENG 132, MTH 154, PHL 232, CPS 177

**First Year, Spring Semester**

ECN 231, Social Science and/or Humanities courses

**Second Year, Fall Semester**

MTH 251, PHY 251, EGR 261 Second Year, Winter Semester  
MTH 254, PHY 252, EGR 262

*\*Not required but recommended to prepare for CPS 177*

*\*\*Not required but strongly recommended*

*\*\*\*Students transferring to Michigan State University take BIO 131*

**HEALTH SCIENCES CAREER PATHWAY**

This pathway includes careers related to the promotion of health as well as the treatment of injuries, conditions and disease. This may include medicine, dentistry, nursing, therapy and rehabilitation, nutrition, fitness and hygiene and animal health care.

Students in Nursing or Allied Health programs that require clinical rotations at local hospitals will be required to submit to a drug test. If the student tests positive for illicit drugs he/she will be removed from the program. Criminal background checks may also be performed and may prevent admission if failed.

**DEGREES/CERTIFICATES****ALLIED HEALTH**

- Diagnostic Medical Sonographer
- Diagnostic Medical Sonographer - Vascular
- Diagnostic Medical Sonographer - Echocardiography
- Emergency Medical Service, Paramedic, EMT
- Medical Assistant

- Medical Receptionist/Transcriptionist
- Medical Receptionist/Insurance Biller
- Radiography

**NURSING**

- RN (Associate Degree in Nursing, ADN)
- Practical Nurse (LPN)
- LPN to RN

**TRANSFER PROGRAMS IN HEALTH SCIENCES PATHWAY**

The first two years of college education usually consist of general education courses, introductory courses in the major and/or program of study, and selected electives. Refer to Pages 38-40 for additional information on transfer and MACRAO. Academic advisors will assist students in planning their transfer program. They can also provide transfer guide sheets indicating JCC courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included.

**MEDICAL LABORATORY TECHNOLOGY:**

- A joint program agreement between Jackson Community College and Kellogg Community College - [AAS]
- Allied Health with Siena Heights JCC & University of Michigan - [BSN]
- Dental Hygiene
- Medical Sciences [pre-medicine, pre-dentistry, pre-chiropractic]
- Physical Therapy
- Pre-Veterinary Science

**DIAGNOSTIC MEDICAL SONOGRAPHY — ASSOCIATE IN APPLIED SCIENCE**

A sonographer is the allied health professional who, for diagnostic purposes, uses high frequency sound waves to create cross-sectional images of the patient's anatomy. Sonographers work in professional harmony with both the radiologist and the clinical physician. Sonographers are required to demonstrate a great deal of independent judgment.

The diagnostic medical sonography (DMS) program is one of only 80+ accredited by the Commission for Accreditation of Allied Health Educational Programs (CAAHEP) in the United States. It is a two-year program leading to an Associate in Applied Science degree. Prerequisite work must be completed prior to acceptance to the program. The curriculum consists of integrated educational and clinical course work with a

minimum of 1,350 supervised clinical hours in an approved clinical education affiliate.

The program prepares the student for employment in the field of DMS; positions are located within hospitals, medical clinics and other diagnostic imaging institutions. Upon successful completion, students are eligible to write the American Registry of Diagnostic Medical Sonography (ARDMS) exams. Satisfactory completion of the ARDMS board certifying exams allows the sonographer to use the initials of RDMS (Registered Diagnostic Medical Sonographer).

Applicants who have earned credentials in other allied health disciplines (e.g., RT, RVT, RDCS, RN) may have the one year of prerequisite work waived and receive higher admission priority, except for DMS 104. Applications must be received by the program director no later than January 31 for Spring term entry.

**Applications are processed according to the following timeline:**

- Applications must be received by the program director no later than January 31.
- Questionnaires sent to applicants by February 15.
- Questionnaires returned no later than first week of March.
- DMS Admission Committee confers third week of March.
- Applicants notified by mail no later than April 15th for Spring semester start.

*Anatomy and Physiology and Introduction to Sonographic Instrumentation must be completed with a grade of 3.0 or higher prior to the admission process of Winter semester.*

Minimum credits:	76
Minimum cumulative GPA:	2.0
Minimum grade:	3.0 in BIO 155, HOC 130 and DMS 104
Minimum JCC credits:	12
MACRAO agreement:	No

**GENERAL EDUCATION REQUIREMENTS — (18 credits)**

**ENGLISH — (3 credits)**

ENG 131 Writing Experience	3
• or 232 Technical & Business Writing	3

**MATHEMATICS — (3 credits)**

MTH 131 Intermediate Algebra	3
• or higher level mathematics course	

**SCIENCE — (5 credits)**

BIO 155 Human Anatomy & Physiology	5
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**SOCIAL SCIENCE — (3-4 credits)**

PSY 140 Introduction to Psychology	4
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**HUMANITIES — (3 credits)**

**Choose one of the following:**

ART 111 Art History: Prehistoric - 1400	3
ART 112 Art History: Renaissance - Present	3
ENG 210 Introduction to Film	3
ENG 236 Women in Changing Society	3
ENG 246 Short Story & Novel	3
ENG 247 Poetry and Drama	3
ENG 249 African American Literature	3
ENG 252 Shakespeare	3
ENG 254 Children's Literature	3
ENG 255 American Literature 19th Century	3
ENG 256 American Literature 20th Century	3
ENG 257 World Literature I	3
HUM 131 Cultural Connections	3
MUS 130 Survey of Non-Western Music	3
MUS 131 Understanding Music	3
MUS 133 Music Education	3
MUS 151 Music Theory I	4
MUS 152 Music Theory II	4
PHL 231 Introduction to Philosophy	3
PHL 232 Logic	3
THR 116 Introduction to Theatre	3

**HEALTH/PHYSICAL FITNESS — (1 credit)**

**Choose one of the following:**

HPF 160 Wellness	1
HPF 168 Weight Training & Conditioning	2
HPF 221 Jazz Techniques	3
HPF 277 Stress Management	2
HPF 278 Stress Management for Parents	2

**ALLIED HEALTH RELATED REQUIREMENTS — (18 credits)**

DMS 100 Introduction to Diagnostic Imaging	3
DMS 104 Intro to Sonographic Instrumentation	3
HOC 130 Introduction to Health Occupations	3
ITE 101 Information Technology Education	3
MOA 120 Medical Terminology	3
SPH 231 Communication Fundamentals	3

**DMS CORE — (40 credits)**

**(2.0 required for each course)**

DMS 101 Sonographic Orientation	3
DMS 105 Sonographic Technique	3
DMS 110 Interpretation I	4
DMS 122 Clinical Experience I	6
DMS 206 Sonography Instrumentation	4
DMS 211 Interpretation II	4
DMS 212 Interpretation III	4
DMS 223 Clinical Experience II	6
DMS 224 Clinical Experience III	6

**MULTI-SKILLED ELECTIVES —  
(Not Required for the Degree)**

MOA 211 Medical Assistant Techniques II .....	4
NUR 121 Pharmacology .....	3
LPN 132 Medications .....	3

**DIAGNOSTIC MEDICAL SONOGRAPHY  
— CERTIFICATE**

Minimum credits: .....	52
Minimum cumulative GPA: .....	2.0
Minimum JCC credits: .....	42
MACRAO agreement: .....	No

**REQUIREMENTS FOR A CERTIFICATE IN DIAGNOSTIC  
MEDICAL SONOGRAPHY**

Students must have previously earned American Registry of Diagnostic Medical Sonography (ARDMS) credentials, e.g., RDMS, RVT, RDCS; or an AAS degree from an accredited program in radiography, nursing, medical assisting, emergency medical services, respiratory therapy, physical therapy assisting or other allied health profession. Students who have earned a baccalaureate degree in a major other than nursing or allied health will be required to meet or show equivalency for all DMS prerequisite course requirements including the following courses: Anatomy and Physiology, Medical Terminology, Introduction to Diagnostic Medical Imaging, Introduction to Sonographic Instrumentation, Information Technology Education and Introduction to Health Occupations. Please see program coordinator to assure eligibility.

**ALLIED HEALTH RELATED REQUIREMENTS —  
(12 credits)**

DMS 100* Intro to Diagnostic Medical Imaging .....	3
DMS 104 Intro to Sonographic Instrumentation .....	3
HOC 130** Introduction to Health Occupations .....	3
ITE 101 Information Technology Education .....	3

**DMS CORE — (40 credits)  
(2.0 required for each course)**

DMS 101 Sonographic Orientation .....	3
DMS 105 Sonographic Techniques .....	3
DMS 110 Sonographic Interpretation I .....	4
DMS 122 Clinical Experience I .....	6
DMS 206 Sonographic Instrumentation .....	4
DMS 211 Sonographic Interpretation II .....	4
DMS 212 Sonographic Interpretation III .....	4
DMS 223 Clinical Experience II .....	6
DMS 224 Clinical Experience III .....	6

**MULTI-SKILLED ELECTIVES —  
(Not Required for the Degree)**

MOA 211 Medical Assistant Techniques II .....	4
NUR 121 Pharmacology .....	3
LPN 132 Medications .....	3

*\*This course may be waived for registered radiographers.*

*\*\*This course is required of students who do not possess an allied health credential but have earned a baccalaureate degree in a major other than allied health.*

**SAMPLE CURRICULUM FOR DMS**

**Spring/Summer**

DMS 101, MOA 211

**Fall**

DMS 105, DMS 110, DMS 122

**Winter**

DMS 206, DMS 211, DMS 223

**Spring/Summer**

DMS 212, DMS 224, LPN 132 or NUR 121

**DIAGNOSTIC MEDICAL SONOGRAPHY  
VASCULAR TECHNOLOGY —  
ASSOCIATE IN APPLIED SCIENCE**

A vascular sonographer is a highly skilled allied health professional who performs arterial and venous diagnostic procedures using high frequency sound waves. A vascular sonographer operates a variety of complex diagnostic and monitoring equipment, as well as numerous ancillary devices.

The vascular sonographer performs carotid duplex scanning, lower and upper Doppler examinations, venous duplex scans, evaluation of test results, monitoring of physiological states of the patient, conducting patient education, and maintaining accurate records and protocols during and after procedures.

The vascular technology program is a two-year program leading to an associate in applied science degree. Prerequisite work must be completed prior to acceptance to the program. The curriculum consists of integrated educational and clinical course work with a minimum of 900 supervised clinical hours with an approved clinical education affiliate. The program is designed to prepare the student for employment in the field of vascular sonography. Vascular positions are located within hospitals, medical clinics, and other diagnostic imaging health institutions. Upon successful completion, students are eligible to write the American Registry of Diagnostic Medical Sonography exams and, if successful, use the credentials RVT (Registered Vascular Technologist).

Applicants who have earned credentials in other allied health disciplines (e.g., RT, RDMS, RDCS, RN) may have prerequisite work waived and receive higher admission priority.

**Applications are processed according to the following timeline:**

- Applications must be received by the program director no later than January 31.
- Questionnaires should be sent to applicants by mid February.
- Questionnaires must be returned no later than the first week in March.
- DMS Admission Committee confers third week of March.
- Applicants notified by mail no later than April 15 for Spring semester start.

*BIO 155-Human Anatomy and Physiology, HOC 130-Intro to Health Occupations and DMS 104-Intro to Sonographic Instrumentation must be completed with a grade of 3.0 or higher prior to the admission process of Winter semester.*

Minimum credits:	.68
Minimum cumulative GPA:	2.0
Minimum grade:	3.0 in BIO 155, HOC 130 and DMS 104
Minimum JCC credits:	.12
MACRAO agreement:	No

**GENERAL EDUCATION REQUIREMENTS — (18 credits)**

**ENGLISH — (3 credits)**

ENG 131 Writing Experience	3
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**MATHEMATICS — (3-4 credits)**

MTH 131 Intermediate Algebra or higher	3-4
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**SCIENCE — (5 credits)**

BIO 155 Human Anatomy & Physiology	5
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**SOCIAL SCIENCE — (3-4 credits)**

PSY 140 Introduction to Psychology	3-4
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**HUMANITIES — (3 credits)**

**Choose one of the following:**

ART 111 Art History: Prehistoric - 1400	3
ART 112 Art History: Renaissance - Present	3
ENG 210 Introduction to Film	3
ENG 236 Women in Changing Society	3
ENG 246 Short Story & Novel	3
ENG 247 Poetry and Drama	3
ENG 249 African American Literature	3
ENG 252 Shakespeare	3
ENG 254 Children's Literature	3
ENG 255 American Literature 19th Century	3
ENG 256 American Literature 20th Century	3
ENG 257 World Literature I	3
HUM 131 Cultural Connections	3
MUS 130 Survey of Non-Western Music	3
MUS 131 Understanding Music	3
MUS 133 Music Education	3

MUS 151 Music I	4
MUS 152 Music Theory II	4
PHL 231 Introduction to Philosophy	3
PHL 232 Logic	3
THR 116 Introduction to Theatre	3

**HEALTH/PHYSICAL FITNESS — (1 credit)**

**Choose one of the following:**

HPF 160 Wellness	1
HPF 168 Weight Training & Conditioning	2
HPF 221 Jazz Technique	3
HPF 277 Stress Management	2
HPF 278 Stress Management for Parents	2

**ALLIED HEALTH CORE — (18 credits)**

DMS 100 Introduction to Diagnostic Imaging	3
DMS 104 Intro to Sonographic Instrumentation	3
HOC 130 Introduction to Health Occupations	3
ITE 101 Information Technology Education	3
MOA 120 Medical Terminology	3
SPH 231 Communication Fundamentals	3

**VASCULAR CORE — (32 credits)**

**(2.0 required for each course)**

DMS 107 Sonographic Orientation-Vascular	3
DMS 151 Peripheral Arterial I	3
DMS 152 Peripheral Arterial II	3
DMS 155 Peripheral Venous	3
DMS 161 Vascular Clinical I (300 hours)	4
DMS 206 Sonographic Instrumentation	4
DMS 251 Cerebrovascular I	3
DMS 253 Cerebrovascular II	1
DMS 265 Vascular Clinical II (300 hours)	4
DMS 266 Vascular Clinical III (300 hours)	4

**SAMPLE CURRICULUM FOR DMS VASCULAR TECHNOLOGY AAS**

**Spring Semester**

DMS 107

**Fall Semester**

DMS 151, DMS 155, DMS 161

**Winter Semester**

DMS 152, DMS 206, DMS 251, DMS 265

**Spring Semester**

DMS 253, DMS 266

**DIAGNOSTIC MEDICAL SONOGRAPHY  
VASCULAR TECHNOLOGY —  
CERTIFICATE**

Students must have previously earned American Registry of Diagnostic Medical Sonography (ARDMS) credentials, e.g., RDMS, RVT, RDCS; or an AAS degree from an accredited program in radiography, nursing, medical assisting, emergency medical services, respiratory therapy, physical therapy assisting or other allied health profession. Students who have earned a baccalaureate degree in a major other than nursing or allied health will be required to meet or show equivalency for all DMS pre-requisite course requirements including the following courses: Anatomy and Physiology, Medical Terminology, Introduction to Diagnostic Medical Imaging, Introduction to Sonographic Instrumentation, Information Technology Education and Introduction to Health Occupations. Please see program coordinator to assure eligibility.

Minimum credits: .....	44*
(*32 credits with previous Allied Health degree)	
Minimum cumulative GPA: .....	2.0
Minimum JCC credits: .....	12
MACRAO agreement: .....	No

**ALLIED HEALTH CORE — (12 credits)**

DMS 100* Introduction to Diagnostic Imaging .....	3
DMS 104* Intro to Sonographic Instrumentation .....	3
ITE 101 Information Technology Education .....	3
HOC 130* Introduction to Health Occupations .....	3

**VASCULAR CORE — (32 credits)**

**(2.0 required for each course)**

DMS 107* Sonographic Orientation-Vascular .....	3
DMS 151 Peripheral Arterial I .....	3
DMS 152 Peripheral Arterial II .....	3
DMS 155 Peripheral Venous .....	3
DMS 206 Sonographic Instrumentation .....	4
DMS 251 Cerebrovascular I .....	3
DMS 253 Cerebrovascular II .....	1
DMS 161 Vascular Clinical I (300 hours) .....	4
DMS 265 Vascular Clinical II (300 hours) .....	4
DMS 266 Vascular Clinical III (300 hours) .....	4

*\*HOC 130, DMS 100, 107, and 104 may be waived through consultation with program coordinator and evidence of current health credential.*

**SAMPLE CURRICULUM FOR DMS VASCULAR  
CERTIFICATE**

**Spring Semester**  
DMS 107

**Fall Semester**  
DMS 151, DMS 155, DMS 161

**Winter Semester**  
DMS 152, DMS 251, DMS 206, DMS 265

**Spring Semester**  
DMS 253, DMS 266

**DIAGNOSTIC MEDICAL SONOGRAPHY  
ECHOCARDIOGRAPHY—  
ASSOCIATE IN APPLIED SCIENCE**

An echocardiographer is the allied health professional who, after an extensive and comprehensive educational process, is qualified to perform an echocardiographic exam. The primary role of the cardiac sonographer is to obtain diagnostic recordings and measurements from the ultrasound image of the heart, including hemodynamic information. This individual assumes great responsibility for the performance of this exam and the techniques for obtaining these recordings require great skill. A thorough understanding of cardiac anatomy, physiology, hemodynamics, and pathophysiology is required.

The echocardiography program (DMS-Echocardiography) is a two-year program leading to an Associate in Applied Science degree. Prerequisite work must be completed prior to acceptance to the program. The curriculum consists of integrated didactic and clinical course work with a minimum of 1136 supervised clinical hours with an approved clinical education affiliate. The program is designed to prepare the student for employment in the field of echocardiography; positions are located within hospitals, medical clinics, and other diagnostic imaging health institutions. Applicants who have earned credentials in other allied health disciplines (e.g., RT, RDMS, RVT, RN) may have prerequisite work waived and receive higher admission priority.

**Applications are processed according to the following time line:**

- Applicants must be received by the program director no later than August 31.
- Questionnaires sent to applicants by mid September.
- Questionnaires returned no later than the first week in October.
- DMS Admissions Committee interviews candidates the first week of November.

- Applicants are notified by mail no later than December 1st for winter semester start.

Minimum credits:	69
Minimum cumulative GPA:	2.0
Minimum grade in BIO 155, HOC 130 and MOA 120:	3.0
Minimum grade in DMS 104:	2.0
Minimum grade in Echo Core courses:	2.0
Minimum JCC credits:	32
MACRAO agreement:	No

**GENERAL EDUCATION PREREQUISITES — (18 credits)**

**ENGLISH — (3 credits)**

ENG 131 Writing Experience	3
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**MATHEMATICS — (3 credits)**

MTH 131 Intermediate Algebra	4
• or higher level mathematics course	

**SCIENCE — (5 credits)**

BIO 155 Human Anatomy & Physiology	5
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**SOCIAL SCIENCE — (3 credits)**

PSY 140 Introduction to Psychology	4
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**HUMANITIES — (3 credits)**

**Choose one of the following:**

ART 111 Art History: Prehistoric - 1400	3
ART 112 Art History: Renaissance - Present	3
ENG 210 Introduction to Film	3
ENG 236 Women in Changing Society	3
ENG 247 Poetry and Drama	3
ENG 249 African American Literature	3
ENG 252 Shakespeare	3
ENG 254 Children's Literature	3
ENG 255 American Literature 19th Century	3
ENG 256 American Literature 20th Century	3
ENG 257 World Literature	3
HUM 131 Cultural Connections	3
MUS 130 Survey of Non-Western Music	3
MUS 131 Understanding Music	3
MUS 133 Music Education	3
MUS 151 Music Theory I	4
MUS 152 Music Theory II	4
PHL 231 Introduction to Philosophy	3
PHL 232 Logic	3
THR 116 Introduction to Theatre	3

**HEALTH/PHYSICAL FITNESS — (1 credit)**

**Choose one of the following:**

HPF 160 Wellness	1
HPF 168 Weight Training & Conditioning	2
HPF 221 Jazz Techniques	3
HPF 277 Stress Management	2
HPF 278 Stress Management for Parents	2

**RELATED REQUIREMENTS — (18 credits)**

DMS 100 Intro to Diagnostic Medical Imaging	3
DMS 104 Intro to Sonographic Instrumentation	3
MOA 120 Medical Terminology	3
SPH 231 Communication Fundamentals	3
ITE 101 Intro to Information Technology	3
HOC 130 Intro to Health Occupations	3

**The following courses must be completed with a grade of 3.0 or higher prior to the admission process:**

- BIO 155 - Anatomy & Physiology
- HOC 130 - Intro to Health Occupations
- MOA 110 - Medical Terminology
- DMS 104 - Intro to Sonographic Instrumentation must be completed with a grade of 2.0 or higher prior to admission into the program.

**ECHOCARDIOGRAPHY CORE — (33 credits)**

**(2.0 required for each course.)**

**Core classes begin in the winter semester.**

DMS 140 Sonographic Orientation and Technique	3
DMS 141 Adult Echo I	4
DMS 143 Clinical I (240 hrs.)	3
DMS 144 Cardiovascular Principles	3
DMS 147 Clinical II (384 hrs.)	5
DMS 240 Adult Echo II	4
DMS 242 Clinical III (512 hrs.)	7
DMS 206 Sonographic Instrumentation	4

**SUGGESTED COURSE SEQUENCE**

**Fall Semester**

DMS 104, HUM 131, PSY 140, MOA 110

**Spring/Summer Semester**

MTH 131, DMS 100, HPF 160

**Winter Semester**

DMS 140, DMS 141, SPH 231, DMS 143

**Winter Semester**

HOC 130, BIO 155, ENG 131, ITE 101

**Spring/Summer**

DMS 144, DMS 147

**Fall Semester**

DMS 206, DMS 240, DMS 242

**DIAGNOSTIC MEDICAL SONOGRAPHY ECHOCARDIOGRAPHY — CERTIFICATE**

Students must have previously earned American Registry of Diagnostic Medical Sonography (ARDMS) credentials, e.g., RDMS, RVT, or an AAS degree from an accredited program in radiography, nursing, medical assisting, emergency medical services, respiratory therapy, physical therapy or other allied health profession. Students who have earned a Baccalaureate Degree in a major other than nursing or allied health will be required to meet or show equivalency for all DMS pre-requisite course requirements including the following courses: Anatomy & Physiology, Medical Terminology, Intro to Diagnostic Medical Imaging, Introduction to Sonographic Instrumentation, Information Technology Education and Introduction to Health Occupations. Please see program coordinator to assure eligibility.

The curriculum consists of integrated didactic and clinical course work with a minimum of 1136 supervised clinical hours with an approved clinical education affiliate. The program is designed to prepare the student for employment in the field of echocardiography. Upon successful completion, students are eligible to write the American Registry of Diagnostic Medical Sonography-Adult Echocardiography certification exams and, if successful, use the credentials RDCS AE (Registered Diagnostic Cardiac Sonographer, Adult Echocardiography).

Minimum credits: .....	45
(36 credits with previous Allied Health degree)	
Minimum Cumulative GPA: .....	2.0
Minimum grade in BIO 155, HOC 130 and MOA 110: .....	3.0
Minimum grade in DMS 104: .....	2.0
Minimum grade in Echo Core courses: .....	2.0
Minimum JCC credits: .....	32
MACRAO agreement: .....	No

**RELATED REQUIREMENTS — (12 credits)**

DMS 100* Intro to Diagnostic Imaging .....	3
DMS 104* Intro to Sonographic Instrumentation .....	3
ITE 101 Intro to Information Technology .....	3
HOC 130* Intro to Health Occupations .....	3

*\*May be waived/substituted through consultation with program coordinator and evidence of current health credential.*

**ECHOCARDIOGRAPHY CORE — (33 credits)**

(2.0 required for each course)

Core classes begin in winter semester.

DMS 140 Echo Orientation & Technique .....	3
DMS 141 Adult Echo I .....	4
DMS 143 Clinical I (240 hrs) .....	3
DMS 144 Cardiovascular Principles .....	3

DMS 147 Clinical II (384 hrs) .....	5
DMS 240 Adult Echo II .....	4
DMS 242 Clinical III (512 hrs) .....	7
DMS 206 Sonographic Instrumentation .....	4

**COURSE SEQUENCE FOR A CERTIFICATE IN ECHOCARDIOGRAPHY**

**Winter Semester:**

DMS 140, DMS 141, DMS 143, ITE 101

**Spring/Summer:**

DMS 144, DMS 147

**Fall Semester:**

DMS 206, DMS 240, DMS 242

**EMERGENCY MEDICAL SERVICES — ASSOCIATE IN APPLIED SCIENCE**

In cooperation with emergency medical services agencies in the community we offer approved Basic EMT and Paramedic courses. Each program (Basic EMT and Paramedic) requires 12-36 hours and is taken over two or three semesters. These credits may be combined with additional courses to obtain an Associate in Applied Science - Emergency Medical Services degree. The curriculum meets the requirements of the U.S. Department of Transportation and is approved by the Michigan Department of Consumer and Industry Services.

Upon successful completion of the program, candidates are eligible to take the State of Michigan EMT or Paramedic exams to become licensed as an EMT or Paramedic.

Minimum credits: .....	84
Minimum cumulative GPA: .....	2.0
Minimum JCC credits: .....	12
MACRAO agreement: .....	No

**GENERAL EDUCATION REQUIREMENTS — (20 credits)**

**ENGLISH — (3 credits)**

ENG 131 Writing Experience .....	3
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**MATHEMATICS — (4 credits)**

MTH 131 Intermediate Algebra .....	4
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**SCIENCE — (5 credits)**

BIO 155 Human Anatomy & Physiology .....	5
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**SOCIAL SCIENCE — (4 credits)**

PSY 140 Introduction to Psychology .....	4
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**HUMANITIES — (3 credits)****Choose one of the following:**

ART 111 Art History: Prehistoric - 1400	3
ART 112 Art History: Renaissance - Present	3
ENG 210 Introduction to Film	3
ENG 236 Women in Changing Society	3
ENG 246 Short Story & Novel	3
ENG 247 Poetry and Drama	3
ENG 249 African American Literature	3
ENG 252 Shakespeare	3
ENG 254 Children's Literature	3
ENG 255 American Literature 19th Century	3
ENG 256 American Literature 20th Century	3
ENG 257 World Literature I	3
HUM 131 Cultural Connections	3
MUS 130 Survey of Non-Western Music	3
MUS 131 Understanding Music	3
MUS 133 Music Education	3
MUS 151 Music I	4
MUS 152 Music Theory II	4
PHL 231 Introduction to Philosophy	3
PHL 232 Logic	3
THR 116 Introduction to Theatre	3

**HEALTH/PHYSICAL FITNESS — (1 credit)****Choose one of the following:**

HPF 160 Wellness	1
HPF 168 Weight Training & Conditioning	2
HPF 221 Jazz Techniques	3
HPF 277 Stress Management	2
HPF 278 Stress Management for Parents	2

**RELATED REQUIREMENTS — (21 credits)**

MOA 120 Medical Terminology	3
EMS 125 EMT: Ambulance	6
EMS 126 EMT: Ambulance	6
NUR 121 Pharmacology	3
SPH 231 Communication Fundamentals	3

**PARAMEDIC CORE REQUIREMENTS — (44 credits)**

EMS 211 Paramedic I	8
EMS 212 Paramedic Lab I	2
EMS 213 Paramedic Clinical I	2
EMS 221 Paramedic II	8
EMS 222 Paramedic Lab II	2
EMS 223 Paramedic Clinical II	2
EMS 231 Paramedic III	8
EMS 232 Paramedic Lab III	2
EMS 233 Paramedic Clinical III	2
EMS 242 Paramedic IV - Lab	2
EMS 243 Paramedic IV - Clinical	6

**EMERGENCY MEDICAL SERVICES —  
CERTIFICATE**

Minimum credits:	67
Minimum cumulative GPA:	2.0
Minimum JCC credits:	12
MACRAO agreement:	No

**EMERGENCY MEDICAL SERVICES CORE****REQUIREMENTS — (50 credits)**

EMS 125 EMT: Ambulance	6
EMS 126 EMT: Ambulance	6
EMS 211 Paramedic I	8
EMS 212 Paramedic Lab I	2
EMS 213 Paramedic Clinical I	2
EMS 221 Paramedic II	8
EMS 222 Paramedic Lab II	2
EMS 223 Paramedic Clinical II	2
EMS 231 Paramedic III	8
EMS 232 Paramedic Lab III	2
EMS 233 Paramedic Clinical III	2
EMS 242 Paramedic IV - Lab	2
EMS 243 Paramedic IV - Clinical	6
BIO 155 Human Anatomy & Physiology	5
MOA 120 Medical Terminology	3
NUR 121 Pharmacology	3

**SKILL SET CREDENTIAL — BASIC  
EMERGENCY MEDICAL TECHNICIAN**

Jackson Community College in cooperation with emergency medical service agencies in the community offers approved Basic EMT. The basic EMT program requires 12 credit hours and is taken over two semesters. The curriculum meets the requirements of the U.S. Department of Transportation and is approved by the Michigan Department of Consumer and Industry Services.

Upon successful completion of the program, candidates are eligible to take the State of Michigan exam to become a licensed EMT or Paramedic.

Minimum credits:	12
Minimum cumulative GPA:	2.0
Minimum JCC credits:	12
MACRAO agreement:	No

**EMT BASIC COURSES — (12 credits)**

EMS 125 EMT: Ambulance	6
EMS 126 EMT: Ambulance	6

**SUGGESTED ELECTIVES**

MOA 120 Medical Terminology	3
MOA 141 Body Structure and Function	4

SPH 240 Interpersonal Communication .....3  
 • or SPH 231 Communication Fundamentals .....3

**MEDICAL ASSISTANT — ASSOCIATE IN APPLIED SCIENCE**

Prepares the student for an entry-level position as a medical assistant in a medical office, clinic, hospital or other health care facility. Clinical (patient care) and administrative (business) skills are included in the course work as well as medical and business theory. On-the-job experience is provided by a 225- hour non-paid externship with a licensed health care practitioner.

Upon completion of the program, the student is eligible to take the American Association of Medical Assistant (AAMA) certification exam to become a Certified Medical Assistant (CMA). This program is fully accredited by AAMA and the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The student may enter any semester part-time or full-time. Program coordinator approval is required to register for MOA 204 Externship and Seminar.

**ENTRANCE REQUIREMENTS**

Must be met before beginning program Course placement assessment\* or during the first semester: MOA 141 Body Structure and Function or LPN 141 Body Structure and Function or BIO 155 Human Anatomy and Physiology. Validated typing skills 45 WPM or keyboarding class. Meet with program coordinator/advisor before or during the first semester enrolled.

Minimum credits: .....67  
 Minimum grades: .....2.5  
 (in MOA 111, MOA 120, MOA 211 and 2.0 in all other courses)  
 Minimum JCC credits: .....12  
 MACRAO agreement: .....No

**GENERAL EDUCATION REQUIREMENTS — (14 credits)**

**ENGLISH — (3 credits)**

ENG 131 Writing Experience .....3

**MATHEMATICS**

Must complete one of the three following math options:

1. ACT composite score of 18 and ACT math score of 18 or
2. Successfully pass JCC mathematics assessment or
3. Complete MTH 110 Pre-Algebra with a 2.0 or higher

**SCIENCE — (4 credits)**

BIO 131 General Biology .....4  
 BIO 132 Human Biology .....4  
 BIO 220 Microbiology .....4

CEM 121 Chemistry for Life .....4  
 CEM 131 General Chemistry .....4  
 CEM 132 Organic and Biological Chemistry .....4  
 NSC 131 Contemporary Science .....4

**SOCIAL SCIENCE — (3 credits)**

PSY 140 Introduction to Psychology .....4

**HUMANITIES — (3 credits)**

Choose one of the following:

ART 111 Art History: Prehistoric to 1400 .....3  
 ART 112 Art History: Renaissance - Present .....3  
 ENG 210 Introduction to Film .....3  
 ENG 236 Women in Changing Society .....3  
 ENG 246 Short Story and Novel .....3  
 ENG 247 Poetry and Drama .....3  
 ENG 249 African American Literature .....3  
 ENG 252 Shakespeare .....3  
 ENG 254 Children's Literature .....3  
 ENG 255 American Literature 19th Century .....3  
 ENG 256 American Literature 20th Century .....3  
 ENG 257 World Literature I .....3  
 HUM 131 Cultural Connections .....3  
 MUS 130 Survey of Non-Western Music .....3  
 MUS 131 Understanding Music .....3  
 MUS 133 Music Education .....3  
 MUS 151 Music Theory I .....4  
 MUS 152 Music Theory II .....4  
 PHL 231 Introduction to Philosophy .....3  
 PHL 232 Logic .....3  
 THR 116 Introduction to Theatre .....3

**HEALTH/PHYSICAL FITNESS — (1 credit)**

Choose one of the following:

HPF 160 Wellness .....1  
 HPF 168 Weight Training & Conditioning .....2  
 HPF 221 Jazz Techniques .....3  
 HPF 277 Stress Management .....2  
 HPF 278 Stress Management for Parents .....2

**RELATED REQUIREMENTS — (25 credits)**

ACC 211 General Accounting .....4  
 DMS 100 Intro to Diagnostic Imaging .....3  
 ITE 101 Information Technology Education .....3  
 NUR 121 Pharmacology .....3  
 • or LPN 132 Medications .....3  
 PSY 140 Introduction to Psychology .....4  
 SEC 230 Machine Transcription for Medical Assistants .....2  
 SEC 241 Medical Office Procedures .....3  
 SPH 231 Communication Fundamentals .....3  
 • or SPH 240 Interpersonal Communication .....3

**MEDICAL ASSISTANT CORE REQUIREMENTS — (28 credits)**

MOA 111 Medical Assistant Techniques I .....	3
MOA 112 Insurance, Reports, Law and Ethics .....	3
MOA 120 Medical Terminology .....	3
MOA 141 (or LPN 141) Body Structure & Functions .....	4
• or BIO 155 Human Anatomy & Physiology .....	5
MOA 145 (or LPN 145 or NUR 207) Normal/Therapeutic Nutrition .....	3
MOA 204 Externship (230 hours + 30 hr. seminar)* .....	5
MOA 211 Medical Assistant Techniques II .....	4
MOA 241 Medical Records .....	3

**ADDITIONAL REQUIREMENTS**

EMS 110 CPR & First Aid .....	2
• or current Adult CPR & First Aid Certification	
• or HOC 130 Intro to Health Occupations .....	3

\* *Program Coordinator approval required to register for MOA 204. Student must validate 2.5 or better in MOA 120, MOA 111, and MOA 211 to qualify for entrance into this course.*

**SAMPLE CURRICULUM FOR AN ASSOCIATE IN APPLIED SCIENCE MEDICAL ASSISTANT****Fall Semester I (13 credits)**

MOA 112, MOA 141, ITE 101, ENG 131

**Winter Semester II (16 credits)**

MTH 110, DMA 100, MOA 120, MOA 111, MOA 211

**Spring Semester III (12 credits)**

ACC 211, PSY 140, HPF course, HUM course

**Fall Semester IV (15 credits)**

MOA 145, SEC 241, EMS 110 ( or HOC 130), LPN 132 (or NUR 121), Science course

**Winter Semester V (16 credits)**

SEC 230, SPH 231 (or SPH 240), MOA 241, MOA 204

**MEDICAL ASSISTANT — CERTIFICATE**

The certificate in medical assisting prepares the student for an entry-level position as a medical assistant in a medical office, clinic, hospital or other health care facility. Clinical (patient care) and administrative (business) skills are included in the course work as well as medical and business theory. On-the-job experience is provided by a 230-hour non-paid externship with a licensed health care practitioner. Upon completion of the program, the student is eligible to take the American Association of Medical Assistant (AAMA) certification exam to become a Certified Medical Assistant (CMA). This program is

fully accredited by AAMA and the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The student may enter any semester part-time or full-time. Program coordinator approval is required for registration in MOA 204 Externship and Seminar.

Minimum credits: .....	41
Minimum grades: .....	2.5
(in MOA 111, MOA 120, MOA 211 and 2.0 in all other courses)	
Minimum JCC credits: .....	12
MACRAO agreement: .....	No

**ENTRANCE REQUIREMENTS**

Pre-entrance: ACCUPLACER criteria met for Reading, Writing, and MTH 110 or Equivalency, Keyboarding skills 45 WPM.

**MATHEMATICS**

**Must complete one of the three following math options:**

1. ACT composite score of 18 and ACT math score of 18 or
2. Successfully pass JCC mathematics assessment or
3. Complete MTH 110 Pre-Algebra with a 2.0 or higher

**RELATED REQUIREMENTS — (13 credits)**

ITE 101 Intro to Information Technology .....	3
NUR 121 Pharmacology .....	3
• or LPN 132 Medications .....	3
PSY 140 Introduction to Psychology .....	4
SEC 241 Medical Office Procedures .....	3

**MEDICAL ASSISTANT CORE REQUIREMENTS — (28 credits)**

MOA 111 Medical Assistant Techniques I .....	3
MOA 112 Insurance, Reports, Law & Ethics .....	3
MOA 120 Medical Terminology .....	3
MOA 141 (or LPN 141) Body Structure & Function .....	4
• or BIO 155 Human Anatomy & Physiology .....	5
MOA 145 (or LPN 145 or NUR 207) Normal/Therapeutic Nutrition .....	3
MOA 204 Externship (230 hours + 30 hr. seminar)* .....	5
MOA 211 Medical Assistant Techniques II .....	4
MOA 241 Medical Records .....	3

**ADDITIONAL REQUIREMENTS**

EMS 110 CPR & First Aid .....	2
• or current Adult CPR & First Aid Certification	
• or HOC 130 Intro to Health Occupations .....	3

\* *Program coordinator approval needed to register for MOA 204. Student must validate 2.5 or better in MOA 120, MOA 111, and MOA 211 for entrance into this course.*

**SUGGESTED ELECTIVES**

DMS 100 Intro to Diagnostic Imaging ..... 3  
 ACC 211 Intro to Accounting ..... 4  
 SPH 231 Communication Fundamentals ..... 3  
 • or SPH 240 Interpersonal Communication ..... 3  
 MOA 242 Advanced Medical Billing ..... 3  
 SEC 230 Machine Transcription for Medical Assistants ..... 2

**SAMPLE CURRICULUM FOR MEDICAL ASSISTANT CERTIFICATE**

**Fall Semester I (15 credits)**

MOA 141, MOA 112, ITE 101, MOA 145, EMS 110 (or HOC 130)

**Winter Semester II (16 credits)**

MOA 111, MOA 120, MOA 211, MOA 241, SEC 241

**Spring Semester III (12 credits)**

PSY 140, NUR 121 (or LPN 132), MOA 204

*Take AAMA/CMA exam in January, apply by October 1, if finished with all requirements for Certificate by December 31st.*

**MEDICAL RECEPTIONIST/TRANSCRIPTIONIST— CERTIFICATE**

This certificate program develops the conceptual understanding and practical skills applicable to the administrative (office) aspect of medical practice. Course work includes the study of the human body, medical terminology, office organization, reception, telephone use, insurance billing, communication skills, record keeping, law and ethics, billing and advanced medical machine transcription, introduction to computers and word processing. The graduate of this program has sufficient training for entry level as a transcriptionist, records clerk and receptionist in a medical setting. Exceptional typing (60 WPM or more) and medical terminology skills are needed for hospital transcribing. This should be emphasized in course choices, if this is the student's goal. Program coordinator approval is required to register for MOA 245 Billing/Transcription Externship. On the job experience is provided through a non-paid externship of 125 hours.

Prerequisite requirements: Before beginning this certificate the student must complete all the course placement requirements and type a minimum of 45 WPM or complete SEC 131, Beginning Typing. The student may enter during any semester and attend either part-time or full-time.

Minimum credits: ..... 31  
 Minimum cumulative GPA: ..... 2.0  
 Minimum Grades: 2.5 or better in MOA 120, SEC 230, SEC 235  
 Minimum JCC credits: ..... 12  
 MACRAO agreement: ..... No

**SEMESTER I — (15 credits)**

ITE 101 Information Technology Education ..... 3  
 MOA 120 Medical Terminology(2.5 or better) ..... 3  
 MOA 112 Insurance Reports, Law and Ethics ..... 3  
 MOA 141 Body Structure and Function ..... 4  
 • or BIO 155 Human Anatomy and Physiology ..... 5  
 ENG 131 Writing Experience ..... 3

**SEMESTER II — (11 credits)**

ITE 186 Microsoft Word ..... 3  
 SEC 230 Machine Transcription for Medical Assistants (2.5 or better) ..... 2  
 SPH 240 Interpersonal Communications ..... 3  
 • or BUS 155 Human Relations in Business ..... 3  
 • or SPH 231 Communication Fundamentals ..... 3  
 SEC 241 Medical Office Procedures ..... 3

**SEMESTER III — (5 credits)**

SEC 235 Advanced Medical Machine Transcription (2.5 or better) ..... 3  
 MOA 245\* Billing/Transcription Externship ..... 2  
 Suggestive Elective NUR 121 Pharmacology ..... 3  
 LPN 132 Medication ..... 3

*\*Program coordinator approval needed to register for MOA 245. Student must validate a 2.5 or better grade in MOA 120, SEC 230, SEC 235 for entrance into MOA 245.*

**MEDICAL RECEPTIONIST/INSURANCE BILLER — CERTIFICATE**

The medical receptionist/insurance biller certificate program prepares the student to work in a medical office, clinic or hospital. Emphasis is placed on interpersonal, written and oral communication, office procedures, medical terminology, use of computers, diagnostic and procedure coding and medical insurance billing, record keeping, medical insurance and accounting. On-the-job experience is provided in a 125-hour non-paid externship.

Prerequisite requirements: Before beginning this certificate the student must complete all the course placement requirements and type a minimum of 45 wpm or complete SEC 131, Beginning Typing.

The student may enter any semester part-time or full-time. Program coordinator approval is required to register for MOA 245 Billing/Transcription Externship. The student must validate a 2.5 in SEC 241, MOA 241, and ITE 101 to qualify for externship placement.

Minimum credits: ..... 33  
 Minimum cumulative GPA: ..... 2.0  
 Minimum Grades: 2.5 or better in SEC 241, MOA 241, and ITE 101  
 Minimum JCC credits: ..... 12  
 MACRAO agreement: ..... No

**SEMESTER I — (13 credits)**

ITE 101 Information Technology Education .....	3
MOA 112 Insurance Reports, Law and Ethics .....	3
MOA 141 Body Structure and Function .....	4
• or LPN 141 Body Structure and Function .....	4
• or BIO 155 Human Anatomy and Physiology .....	5

**SEMESTER II (12 credits)**

ACC 211 General Accounting .....	4
SEC 241 Medical Office Procedures .....	3
MOA 241 Medical Records (2.5 or better) .....	3

**SEMESTER III — (3 credits)**

SPH 231 Communication Fundamentals .....	3
• or SPH 240 Interpersonal Communications .....	3
• or BUS 155 Human Relations in Business .....	3

**SEMESTER IV — (5 credits)**

MOA 242 Advanced Medical Billing (2.5 or better) .....	3
MOA 245 Billing/Transcription Externship* .....	2

**SUGGESTED ELECTIVES**

NUR 121 Pharmacology .....	3
LPN 132 Medication .....	3

*\*Program coordinator approval needed to register for MOA 245. Student must validate 2.5 or better in MOA 241, SEC 241, and ITE 101 for entrance into this course*

**NURSING**

Nursing is a dynamic and changing field with broader employment opportunities than ever before. It is expected to have one of the largest number of new job openings in the next decade. Many future nurses will be employed in home health, long-term or ambulatory care, although nursing careers are still available in traditional settings such as hospitals, medical offices and clinics. Program options reflect the variety of career paths available to future nursing professionals.

**JCC PROGRAM CHOICES**

- Nursing, JCC & University of Michigan - Bachelor of Science in Nursing
- Nursing, RN - Associate in Applied Science
- Nursing, LPN to ADN - Associate in Applied Science
- Practical Nurse - Certificate

*Note: Students who wish to begin a bachelor's degree in nursing and transfer to a four-year college or university (other than those in the JCC/U of M program) should contact the university where they are planning to transfer.*

**NURSING — ASSOCIATE IN APPLIED SCIENCE**

The Associate in Applied Science, Nursing (ADN) program is a two-year program consisting of integrated lectures, labs, and clinicals conducted in approved clinical education affiliates. The program prepares students to demonstrate competency in providing nursing care in a variety of health care settings and for employment in the field of registered nursing. Candidates successfully completing the ADN program are eligible to apply for the licensing examination required for licensure as a registered professional nurse (RN).

There are special admission requirements to the nursing program and it is the student's responsibility to understand the requirements and adhere to them. Students must meet all admission requirements. It is required that all students entering the ADN program take the Course Placement Assessment, ACT or SAT, unless otherwise exempt. If, as a result, basic courses are required, they must be taken and completed with at least a grade of 2.0 prior to admission to the program.

Entry into the program is competitive and based on completion of Course Placement requirement(s), prerequisite courses and a competitive point system. Competitive points are based on grades earned in general education, nursing prerequisite and other related courses completed. NOTE: Check "The Point System" on the "ADN Selection Process-Worksheet" regarding values of points for designated grades. Contact an advisor in Student Services for further information and assistance. ADN prerequisite courses are listed below.

Students are required to take the NCLEX Review Program as part of the curriculum in order to graduate. Multiple standardized exams are also required at various points.

Minimum credits: .....	72
Minimum cumulative GPA: .....	2.0
Minimum grades: .....	3.0
in BIO 155 & CEM 121 or 132, and 2.0 in all other required courses.	
Minimum JCC credits: .....	41
MACRAO agreement: .....	No

*Prerequisites MUST be completed prior to beginning the program.*

**PREREQUISITE COURSES**

CEM 121 Chemistry of Life .....	4
• or CEM 132 Organic and Biological Chemistry (3.0 or higher) .....	4
ENG 131 Writing Experience .....	3
PSY 140 Introduction to Psychology .....	4
BIO 220 Microbiology .....	4
BIO 155 Human Anatomy & Physiology (3.0 or higher) .....	5

*\* Highly recommended to take CEM or BIO 220 prior to BIO 155. BIO 155, Human Anatomy & Physiology, must be taken within the last 8 years. Nursing courses MUST be taken in sequence, with the exception of Pharmacology. Students are required to take the NET Test and NCLEX review course as part of the curriculum in order to graduate.*

Students may apply to be admitted for a fall or winter start of this program. Call Nursing Admissions at 796-8424 to receive a complete information packet. An academic advisor must be consulted to apply to the program.

**GENERAL EDUCATION REQUIREMENTS — (16 credits) \***

All Course Placement Requirements Must Be Satisfied

*\*It is recommended that General Education requirements be taken before the nursing sequence of courses.*

**ENGLISH — (3 credits)**

ENG 131 Writing Experience ..... 3

**MATHEMATICS**

All students interested in the nursing program must complete one of the three following math options:

1. ACT composite score of 18 and math score of 18 or
2. Successfully pass JCC course placement mathematics assessment or
3. Complete MTH 110 with a 2.0 or higher.

**SCIENCE — (5 credits - 3.0 of higher in the course)**

BIO 155 Human Anatomy & Physiology ..... 5

**SOCIAL SCIENCE — (4 credits)**

PSY 140 Introduction to Psychology ..... 4

**HUMANITIES — (3 credits)**

**Choose one of the following:**

ART 111 Art History: Prehistoric - 1400 ..... 3  
 ART 112 Art History: Renaissance - Present ..... 3  
 ENG 210 Introduction to Film ..... 3  
 ENG 236 Women in Changing Society ..... 3  
 ENG 246 Short Story & Novel ..... 3  
 ENG 247 Poetry and Drama ..... 3  
 ENG 249 African American Literature ..... 3  
 ENG 252 Shakespeare ..... 3  
 ENG 254 Children's Literature ..... 3  
 ENG 255 American Literature 19th Century ..... 3  
 ENG 256 American Literature 20th Century ..... 3  
 ENG 257 World Literature I ..... 3  
 HUM 131 Cultural Connections ..... 3

MUS 130 Survey of Non-Western Music ..... 3  
 MUS 131 Understanding Music ..... 3  
 MUS 133 Music Education ..... 3  
 MUS 151 Music Theory I ..... 4  
 MUS 152 Music Theory II ..... 4  
 PHL 231 Introduction to Philosophy ..... 3  
 PHL 232 Logic ..... 3  
 THR 116 Introduction to Theatre ..... 3

**HEALTH/PHYSICAL FITNESS — (1 credit)**

**Choose one of the following:**

HPF 160 Wellness ..... 1  
 HPF 168 Weight Training & Conditioning ..... 2  
 HPF 221 Jazz Techniques ..... 3  
 HPF 277 Stress Management ..... 2

**RELATED REQUIREMENTS (11 credits)**

BIO 220 Microbiology ..... 4  
 CEM 121 Chemistry of Life ..... 4  
     • or CEM 132 Organic & Biological Chemistry  
       (3.0 or higher in the course) ..... 4  
 PSY 252 Developmental Psychology ..... 3

**NURSING CORE REQUIREMENTS (45 credits)**

NUR 101 Fundamentals of Nursing ..... 6  
 NUR 121 Pharmacology ..... 3  
 NUR 170 Self-Care ..... 1  
 NUR 242 Physical Assessment ..... 1  
     • or NUR 245 Health Assessment ..... 3  
 NUR 171 Supportive Educative Nursing ..... 4  
 NUR 172 Pathophysiology ..... 4  
 NUR 173 Family I ..... 4  
 NUR 270 Partially Compensatory ..... 4  
 NUR 271 Family II ..... 4  
 NUR 272 Mental Health ..... 5  
 NUR 273 Wholly Compensatory ..... 5  
 NUR 274 Leadership ..... 4

**SAMPLE CURRICULUM FOR NURSING (ADN) AAS**

**Semester I**

NUR 101, NUR 170, NUR 242 or NUR 245, PSY 252, NUR 121

**Semester II**

NUR 171, NUR 172, NUR 173, HPF\*\*

**Semester III**

NUR 270, NUR 271, NUR 272

**Semester IV**

NUR 273, NUR 274, Humanities elective\*\*

1. PSY 252 may be taken prior to Semester I but must be completed prior to Semester II. This course MUST be completed prior to NUR 173 (Family I) in the nursing sequence.

- 2. NUR 121 if not completed prior to admission into the program, MUST be taken during Semester I-concurrent with NUR 101.

Recommend completion of Developmental Psychology and Pharmacology prior to entry into the nursing program.

**\*\* Nursing courses are not offered during Spring semester. Students can complete general education requirements during this time. It is highly recommended that general education courses be taken before the nursing course sequence if at all possible.**

**NOTE: Nursing courses are assigned various labs and clinicals. Be sure to follow directions in the schedule book of courses each semester you register. The schedule is subject to change on short notice. Specific clinical sites and times cannot be guaranteed.**

*The Nursing Department reserves the right to change the curriculum and program requirements.*

### NURSING - LPN TO ADN — ASSOCIATE IN APPLIED SCIENCE

The Associate in Applied Science, Nursing - LPN to ADN program, is a three-semester program, beginning in the Fall Semester. The program consists of integrated lectures, labs, and clinicals conducted in approved clinical education affiliate settings. The program is designed to educate students to provide competent nursing care in a variety of health care settings and for employment in the field of registered nursing. Candidates who successfully complete the LPN to ADN program are eligible to apply for the licensing examination required for licensure as a registered professional nurse (RN).

There are special admission requirements to the LPN to ADN nursing program and it is the student's responsibility to understand the requirements and adhere to them. Students must meet all admission requirements. Candidates entering the LPN to ADN program must have the following: valid Michigan unencumbered LPN license; documented minimum of 1,000 hours of clinical practice as a LPN, (within the last 5 years-prior to start of clinical courses); pass the following competency exam: National League for Nursing (NLN) Foundations of Nursing and Pharmacology NLN exam (or take the course)

LPN to ADN prerequisite courses are listed.

Minimum credits:	60
Minimum cumulative GPA:	2.0
Minimum grades:	2.0 in all required classes
Minimum JCC credits:	29
MACRAO agreement:	No

*Prerequisites MUST be completed prior to beginning the program.*

#### PREREQUISITE COURSES

CEM 121 Chemistry of Life	4
• or CEM 132 Organic and Biological Chemistry	4
ENG 131 Writing Experience	3
PSY 140 Introduction to Psychology	4
BIO 220 Microbiology	4
BIO 155 Human Anatomy & Physiology	5

*\* Highly recommended to take CEM or BIO 220 prior to BIO 155*

BIO 155 must be taken within the last 8 years. Nursing courses MUST be taken in sequence, with the exception of Pharmacology.

Students are required to take the NCLEX review course as part of the curriculum in order to graduate. Students may apply to be admitted for the fall start of this program. Call Nursing Admissions at 796-8424 to receive a complete information packet and details on NLN testing and associated costs. An academic advisor must be consulted to apply to the program. Advisors are available in Student Services.

#### GENERAL EDUCATION REQUIREMENTS — (16 credits) \*

All course placement requirements must be satisfied prior to admission.

*\*It is recommended that General Education requirements be taken before the nursing sequence of courses.*

#### ENGLISH — (3 credits)

ENG 131 Writing Experience	3
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#### MATHEMATICS

All students interested in the nursing program must complete one of the three following math options:

1. ACT composite score of 18 and math score of 18 or
2. Successfully pass JCC course placement mathematics assessment or
3. Complete MTH 110 with a 2.0 or higher.

#### SCIENCE — (5 credits)

BIO 155 Human Anatomy & Physiology	5
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#### SOCIAL SCIENCE — (4 credits)

PSY 140 Introduction to Psychology	4
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#### HUMANITIES — (3 credits)

<b>Choose one of the following:</b>	
ART 111 Art History Prehistoric - 1400	3

ART 112 Art History: Renaissance - Present	3
ENG 236 Women in Changing Society	3
ENG 246 Short Story and Novel	3
ENG 247 Poetry and Drama	3
ENG 249 African American Literature	3
ENG 252 Shakespeare	3
ENG 254 Children's Literature	3
ENG 255 American Literature 19th Century	3
ENG 256 American Literature 20th Century	3
ENG 257 World Literature I	3
HUM 131 Cultural Connections	3
MUS 130 Survey of Non-Western Music	3
MUS 131 Understanding Music	3
MUS 133 Music Education	3
MUS 151 Music Theory I	4
MUS 152 Music Theory II	4
PHL 231 Introduction to Philosophy	3
PHL 232 Logic	3
THR 116 Introduction to Theatre	3

**HEALTH/PHYSICAL FITNESS — (1 credit)****Choose one of the following:**

HPF 160 Wellness	1
HPF 168 Weight Training & Conditioning	2
HPF 221 Jazz Techniques	3
HPF 277 Stress Management	2

**RELATED REQUIREMENTS — (11 credits)**

BIO 220 Microbiology	4
CEM 121 Chemistry of Life	4
• or CEM 132 Organic & Biological Chemistry	4
PSY 252* Developmental Psychology	3

**NURSING CORE REQUIREMENTS (33 credits)**

NUR 120 Transition Bridge	3
NUR 121 Pharmacology	3
NUR 170 Self-Care	1
NUR 172 Pathophysiology	4
NUR 270 Partially Compensatory	4
NUR 271 Family II	4
NUR 272 Mental Health	5
NUR 273 Wholly Compensatory	5
NUR 274 Leadership	4

**SAMPLE CURRICULUM****Semester I (Fall)**

NUR 120, NUR 121\*, NUR 170, NUR 172, PSY 252\*

**Semester II (Winter)**

NUR 270, NUR 271, NUR 272, HPF\*\*

**Spring Semester**

No nursing courses offered. Finish Gen. Ed. Requirements\*\*

**Semester III (Fall)**

NUR 273, NUR 274, Humanities elective\*\*

\* *May take before Nursing Sequence but must be completed prior to NUR 270, NUR 271, & NUR 272. Students may test out of NUR 121.*

\*\* *Nursing courses are not offered during Spring Semester. Students can complete general education requirements during this time. It is highly recommended that general education courses be taken before the nursing course sequence if at all possible. NOTE: Nursing courses are assigned various labs and clinicals. Be sure to follow directions in the schedule book of courses each semester you register. The schedule is subject to change on short notice. Specific clinical sites and times cannot be guaranteed.*

*The Nursing Department reserves the right to change the curriculum and program requirements.*

**PRACTICAL NURSE — CERTIFICATE**

A one-year program that prepares students to provide direct nursing care, under supervision, to individuals in a variety of health care settings. The program consists of integrated lectures, labs and clinical experiences. Students who successfully complete the curriculum receive the certificate in practical nursing and are eligible to apply to write the state licensing examination required for licensure as a practical nurse (LPN). Admission to the program involves an application process. It is the student's responsibility to understand the requirements and adhere to them. Students must meet all admission requirements. It is required that all students entering the nursing program take the Course Placement Assessment, ACT, or SAT, unless otherwise exempt. If as a result, basic courses are required, they must be taken and completed with at least a grade of 2.0. Admission is on a competitive point system. Points are based on grades earned in prerequisite courses. Call Nursing Admissions at (517) 796-8472 to receive a complete information packet. An advisor must be consulted to apply to the program. Contact an advisor in Student Services.

The Practical Nursing program begins in March of each year. PN classes are on a different course calendar than other classes.

All science classes must be taken within the last eight years. PN courses must be taken in sequence.

Students are required to take a licensure preparation course at JCC as part of their curriculum in order to graduate.

**Must complete one of the following three math options:**

1. ACT composite of 18 & and ACT math score of 18 or

2. Successfully pass JCC mathematics assessment or
3. Complete MTH 110 with a 2.0 or higher

Minimum credits: .....	45
Minimum cumulative GPA: .....	2.0
Minimum grades: . . . 2.0 in all prerequisite and nursing classes. HOWEVER - Check "The Point System" on the "PN Selection Process-Worksheet" regarding values of points for designated grades. Admission is competitive and based on grades.	
Minimum JCC credits: .....	32
MACRAO agreement: .....	No

**PREREQUISITE RELATED REQUIREMENTS — (10 credits)**

**Prior to acceptance to the program:**

LPN 141 Body Structure & Function .....	4
• or MOA 141 Body Structure & Function .....	4
• or BIO 155 Human Anatomy & Physiology .....	5
NUR 207 Normal/Therapeutic Nutrition .....	3
• or MOA 145 Normal/Therapeutic Nutrition .....	3
• or LPN 145 Normal/Therapeutic Nutrition .....	3
LPN 132 Medications .....	3
• or NUR 121 Pharmacology .....	3

**PRACTICAL NURSING CORE REQUIREMENTS — (35 credits)**

**Must be completed in sequence shown.**

**Semester I**

LPN 131 Foundations of Nursing .....	6
MOA 120* Medical Terminology .....	3

**Semester II**

LPN 180 Nursing Care of Adults-1A .....	6
LPN 181 Nursing Care of Adults-1B .....	6

**Semester III**

LPN 182 Role of the Practical Nurse .....	2
LPN 183 Nursing Care of Adults II .....	6
LPN 184 Maternal/Child Concepts .....	6

*\*Preferable to be taken before being admitted to the nursing program. NOTE: Nursing courses include various labs and clinicals, which must be taken in addition to the lectures. Be sure to follow directions in the course schedule book each semester and consult with an academic advisor for guidance. This schedule is subject to change on short notice. Specific clinical sites and times cannot be guaranteed.*

*The department reserves the right to change the curriculum and program requirements as necessary.*

**RADIOGRAPHY PROGRAM**

A radiographer is the allied health professional who exposes and develops radiographs of patients and hospitals and various health clinical settings. Another function of the radiographer is to assist the radiology physician (radiologist) in the administration of contrast material to patients in order to enhance the visibility of certain anatomical structure's on a radiograph. It is designed to prepare the student for employment in the field of diagnostic radiography.

The radiography (RAD) program at JCC is accredited by the North Central Association of Colleges and Secondary Schools. It is a two-year program leading to an Associate in Applied Science degree. The curriculum consists of integrated didactic and clinical course work in an approved clinical education affiliate.

It is designed to prepare the student for employment in the field of diagnostic radiography; positions are located within hospitals, medical clinics, and other diagnostic imaging institutions. Upon successful completion, students are eligible to write the American Registry of Radiologic Technologists (ARRT) exams. Satisfactory completion of the ARRT board certifying exams allows the radiographer to use the initials of R.T. (R), Registered Technologist (Radiography).

**RADIOGRAPHY — ASSOCIATE IN APPLIED SCIENCE**

Students in this program are required to satisfy the college core curriculum as well as the core curriculum required by the Radiography Program. There are four prerequisite classes for the program, with students being allowed to take the college core curriculum while in the program.

Applicants must complete DMS 100, BIO 155, HOC 130 and MOA 110 before admission to the program. Applications must be received by the program director no later than January 31st. RAD Admission Committee confers the first week of April. Applicants are notified by mail no later than April 30th for Spring/Summer semester start.

Minimum credits: .....	81
Minimum cumulative GPA: .....	2.0
Minimum grades: . . . . . 3.0 in DMS 100, HOC 130 & MOA 110 and 2.0 in BIO 155	
Minimum JCC credits: .....	12
MACRAO agreement: .....	No

**GENERAL EDUCATION REQUIREMENTS — (18 credits)**

**ENGLISH — (3 credits)**

ENG 131 Writing Experience .....	3
• or ENG 232 Technical and Business Writing .....	3

**MATHEMATICS — (3-4 credits)**

MTH 131 Intermediate Algebra .....	3-4
• or higher level mathematics course	

**SCIENCE — (5 credits)**

BIO 155 Human Anatomy & Physiology .....	5
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**SOCIAL SCIENCE — (3-4 credits)**

PSY 140 Introduction to Psychology .....	3-4
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**HUMANITIES — (3 credits)****Choose one of the following:**

ART 111 Art History: Prehistoric-1400 .....	3
ART 112 Art History: Renaissance-Present .....	3
ENG 210 Introduction to Film .....	3
ENG 236 Women in Changing Society .....	3
ENG 247 Poetry & Drama .....	3
ENG 249 African American Literature .....	3
ENG 252 Shakespeare .....	3
ENG 254 Children's Literature .....	3
ENG 255 American Literature 19th Century .....	3
ENG 256 American Literature 20th Century .....	3
ENG 257 World Literature I .....	3
HUM 131 Cultural Connections .....	3
MUS 130 Survey of Non-Western Music .....	3
MUS 131 Understanding Music .....	3
MUS 133 Music Education .....	3
MUS 151 Music Theory I .....	4
MUS 152 Music Theory II .....	4
PHL 231 Introduction to Philosophy .....	3
PHL 232 Logic .....	3
THR 116 Introduction to Theatre .....	3

**HEALTH/PHYSICAL FITNESS — (1 credit)****Choose one of the following:**

HPF 160 Wellness .....	1
HPF 168 Weight Training & Conditioning .....	2
HPF 221 Jazz Techniques .....	3
HPF 277 Stress Management .....	2
HPF 278 Stress Management for Parents .....	2

**ALLIED HEALTH RELATED REQUIREMENTS — (20 credits)**

HOC 130 Introduction to Health Occupations .....	3
ITE 101 Intro to Information Technology Education .....	3
DMS 100 Intro to Diagnostic Medical Imaging .....	3
MOA 120 Medical Terminology .....	3
SPH 231 Communication Fundamentals .....	3
BIO 155 Human Anatomy & Physiology .....	5

**RAD CORE REQUIREMENTS — (48 credits; 2.0 required for each course)**

RAD 120 Radiographic Orientation .....	2
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RAD 121 Radiographic Positioning I .....	4
RAD 125 Radiographic Positioning II .....	4
RAD 126 Clinical Practicum I .....	3
RAD 162 Clinical Practicum II .....	3
RAD 210 Clinical Practicum III .....	5
RAD 214 Clinical Practicum IV .....	5
RAD 219 Clinical Practicum V .....	5
RAD 160 Fundamentals of Radiologic Science .....	4
RAD 161 Radiographic Exposure .....	4
RAD 213 Radiobiology .....	2
RAD 212 Special Radiographic Studies .....	4
RAD 218 Radiographic Pathology .....	3

**MULTI-SKILLED CERTIFICATION ELECTIVES****(Not Required for the Degree)**

MOA 211 Medical Assistant Techniques II .....	4
NUR 121 Pharmacology .....	3
LPN 132 Medications .....	3

**SUGGESTED COURSE SEQUENCE****Prerequisite Semesters:****Winter:**

BIO 155, HOC 130, DMS 100, MOA 110

**First Year****Spring:**

RAD 120, RAD 121, MOA 211 (Multiskilled Cert. Curriculum - optional)

**Fall:**

RAD 125, RAD 126, ENG 131, MTH 131

**Winter:**

RAD 160, RAD 161, RAD 162, HPF course

**Second Year****Spring:**

RAD 210, LPN 132 (Multiskilled Cert. Curriculum - optional), ITE 101

**Fall:**

RAD 214, RAD 213, RAD 212, Humanities course

**Winter:**

RAD 219; RAD 218; PSY 140

## TRANSFER PROGRAMS

### MEDICAL LABORATORY TECHNOLOGY

Medical Laboratory Technicians search for clues about the presence, extent, and causes of disease. They use their knowledge of how diseases affect test results to provide an accurate and complete picture of a patient's condition. MLTs analyze blood and body fluids for a wide variety of chemical changes, using the latest biomedical instruments. They culture and identify bacteria that cause disease and examine blood to detect anemias, leukemias, and infections, ensuring that donor blood is safe for transfusion.

Kellogg Community College and JCC jointly offer an Associate of Applied Science degree program in Medical Laboratory Technology. This program allows students to take the specified general education courses identified in this agreement at JCC and complete their program by taking the occupational specific courses at Kellogg Community College. These courses may be taken concurrently provided students are formally admitted to the program at Kellogg Community College and all prerequisite course requirements are adhered to. Consult an academic advisor for more information.

Bachelor of Applied Science in **Allied Health Option** with Siena Heights University offers a unique bachelor of applied science in allied health degree program for JCC students with training and/or experience in diagnostic medical sonography, emergency medical services, medical assistant, nursing and related fields. This career-oriented degree for graduates of JCC's two-year programs is structured on an inverted major concept. All the courses needed to earn a bachelor's degree are available on JCC's main campus through the Siena Heights University degree completion center.

### JCC/U OF M BACHELOR OF SCIENCE IN NURSING PROGRAM

A Bachelor of Science in Nursing (BSN) degree prepares students for a critically important, well-paid and secure career. It also allows broader advancement opportunities since some positions are open only to nurses with a minimum of a bachelor's degree. Careers may include advancement to positions in management or clinical education. The JCC/U of M Bachelor of Science in Nursing program allows students to enroll and complete the first segment of a baccalaureate nursing program at JCC and complete the remaining five terms at the University of Michigan. Students must meet the admissions requirements to JCC and the U of M School of Nursing, which requires a 3.0 cumulative GPA in all prior college experience. The program is competitive with a limited number of spaces available annually. For more information contact: Office of Nursing Admissions at (517) 796-8424 or Student Development at (517) 796-8402.

### DENTAL HYGIENE

Dental hygienists work under the direction or supervision of a licensed dentist, and must be licensed by the state in which they practice. Clinical responsibilities of the dental hygienist in Michigan include oral examination; scaling and polishing teeth; exposing, processing, mounting and interpreting x-rays; taking impressions and preparing diagnostic models; and other activities related to the oral health of the patient.

JCC offers only prerequisite and general education courses that can be transferred to a dental hygiene program. Five colleges/universities offer a dental hygienist program. Some offer an associate degree and others a bachelor's degree. Consult an academic advisor for more information on transfer options available.

### MEDICAL SCIENCES (Pre-medicine, Pre-dental, Pre-pharmacy)

The medical sciences major is designed for pre-professional students who are interested in graduate training in human medicine. Students have a variety of areas of specialization within the field of medicine available to them at the post-graduate level. They may pursue medical, osteopathic, or dental school, graduate level pharmacy programs and physician's assistant or pathology assistant programs.

### SAMPLE CURRICULUM FOR MEDICAL SCIENCES

#### First Year, Fall Semester

BIO 131, CEM 141, , MTH 140 or MTH 151, ENG 131

#### First Year, Winter Semester

BIO 152, CEM 142, ENG 132, PSY 140

#### First Year, Spring Semester

PSY 252, MACRAO Humanities course

#### Second Year, Fall Semester

BIO 151, CEM 241, PHY 231, PHL 231

#### Second Year, Winter Semester

CEM 242, PHY 232, ECN 231, MACRAO Humanities course

### PHYSICAL THERAPY

Physical therapists provide clients, infants through elderly adults, with services at the preventive, acute and rehabilitative stages directed toward achieving increased functional independence and decreased functional impairment. Physical therapists interact and practice in collaboration with a variety of health professionals.

### SAMPLE CURRICULUM FOR PHYSICAL THERAPY

#### First Year, Fall Semester\*

ENG 131, MTH 140, SOC 231, CEM 141\*

**First Year, Winter Semester**

ENG 132, BIO 131, PHL 231, PSY 140, CEM 142

**Second Year, Fall Semester**

PSY 251, PHY 231, CEM 241, MACRAO Humanities course

**Second Year, Winter Semester**

BIO 152, CEM 242, PHY 232, PSY 252, MACRAO Humanities courses

*\*Some programs require the chemistry sequence CEM 141, 142, 241, 242*

**PRE-VETERINARY**

Veterinarians play a major role in the health care of pets, livestock, and zoo, sporting, and laboratory animals. Veterinarians also use their skills to protect humans against diseases carried by animals, and conduct clinical research on human and animal health problems.

**SAMPLE CURRICULUM FOR PRE-VETERINARY****First Year, Fall Semester**

BIO 131, CEM 141, MTH 140 or MTH 151, ENG 131

**First Year, Winter Semester**

BIO 152, CEM142, ENG 132, HIS 231 or 232, PSY 140 or SOC 231

**Second Year, Fall Semester**

CEM 241, PHY 231, ECN 231, MACRAO Humanities course

**Second Year, Winter Semester**

CEM 242, PHY 232, MACRAO Social Science courses

**HUMAN SERVICES CAREER PATHWAY**

This career pathway includes careers related to economic, political and social systems including education, government, law and law enforcement, early childhood development and education, civil service, education, leisure and recreation, military, religion, personal services and social services. These may include law and legal studies, law enforcement, public administration and child and family services.

**DEGREES/CERTIFICATES**

- Early Childhood Development & Education
- Corrections
- Law Enforcement

**TRANSFER PROGRAMS IN HUMAN SERVICES PATHWAY**

The first two years of college education usually consist of general education courses, introductory courses in a major and/or program of study, and selected electives. Refer to pages 38-39 for additional information on transfer and MACRAO. Academic advisors assist in planning transfer programs, and provide transfer guide sheets indicating courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included.

- Criminal Justice/Corrections or Law Enforcement to Siena Heights University
- Psychology
- Social Work
- Pre-Law
- Education

**EARLY CHILDHOOD DEVELOPMENT AND EDUCATION — ASSOCIATE IN APPLIED SCIENCE**

Early Childhood professionals nurture and teach young children - birth through age 8 - in child care centers, nursery schools, preschools, public schools, and family child care homes. Many Early Childhood professionals perform a combination of basic care and teaching duties. They facilitate activities that stimulate children's physical, emotional, intellectual and social growth. They help children explore their interests, develop their talents and independence, build self-esteem and learn how to behave with others. In addition to attending to children's educational needs, they help keep children healthy by serving nutritious meals and snacks, and teaching good eating habits and personal hygiene. They see to it that children have proper rest periods. They spot children who may not feel well or show signs of emotional or developmental problems and discuss these matters with their supervisor, service team and the child's parents.

Early Childhood settings include private homes, schools, religious institutions, workplaces where employers provide care for employees' children, or private buildings. Individuals who provide care in their own homes are generally called family child care providers. Preschool teachers and child-care workers held about 1.9 million jobs in 2001, serving over 13 million children. Many worked part time. About 4 out of 10 preschool teachers and child-care workers are self-employed, most of whom are family daycare providers. Children in the care of paraprofessionals, kindergarten, 1st and 2nd grade teachers benefit from their specialized training in the Early Childhood field as well.