

# SANFORD MEDICAL CENTER

## SCHOOL OF RADIOLOGIC TECHNOLOGY

### 2022 CLINICAL EDUCATION PLAN

The purpose of the Clinical Plan identified below is to ensure comparable clinical education among all students. All students will have access to clinical settings that provide a wide range of procedures for competency achievement. Every student will rotate through the clinical areas listed below.

\* For the clinical assignments which are limited, the number of weekly assignments are listed in the upper right corner of each section. The remainder of the clinical assignments are continuous, and each student will be assigned on a weekly basis.

This program combines the didactic and clinical experience; generally providing 4.4 - 5.5 hours of clinical experience per day. Scheduled didactic and clinical hours combined **WILL NOT** exceed 10 hours per day or 40 hours per week.

There are a total of 98 weeks of didactic and clinical education in this program. The program begins with 4 weeks of orientation, which includes Sanford Medical Center and Rad. Tech. Program policy review, online Net Learning CBN competencies, CPR certification, and specific orientation at the VDM, MB2, SCH, OR, mobile, and rad. dept. In addition, during this time, students will begin the following classes: Introduction to Radiologic Technology, Radiation Protection, Patient Care, Medical Terminology, and A&P.

Following the orientation period, each student is scheduled for clinical rotations which are listed below (1 week at a time). All assignments are completed under the direct supervision of a radiologic technologist. Weekly evaluations are completed on each student to ensure the student's clinical skills are progressing with each rotation. The student to radiography clinical staff ratio is 1:1. However, more than 1 student may be temporarily assigned to one technologist during uncommonly performed procedures.

CLINICAL AREA	NUMBER OF ROTATIONS
<b>OFFICE / FILE ROOM</b>	*1
Students will gain knowledge of: <ul style="list-style-type: none"> <li>- Patient check in process</li> <li>- Completion of Outpatient paperwork for scheduled exams</li> <li>- Proper phone etiquette</li> </ul>	
*1 <sup>st</sup> year students will complete a 1 week rotation during the 1 <sup>st</sup> quarter	
<b>PATIENT TRANSPORT</b>	*1
*1 <sup>st</sup> year students will focus becoming familiar with patient room location, proper patient ID, patient checkout, and patient transportation. <ul style="list-style-type: none"> <li>- Prior to this rotation, students will be educated on HIPAA regulations, patient ID, CPR, patient checkout, and patient transportation</li> </ul>	

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**RADIOGRAPHY RM 5**

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*\*1<sup>st</sup> year students* will focus on and complete competencies on chest, abdomen, extremity and spine exams

*\*2<sup>nd</sup> year students* will focus on and complete competencies on trauma extremities and continue to build positioning skills on exams in which competencies have been completed during 1st year.

- With each rotation, students will become more proficient in the performance of various exams on a variety of patient conditions, continue to develop critical thinking skills, and work on becoming more proficient with trauma situations.

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**RADIOGRAPHY RM 6**

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Fluoroscopic exams include: Barium enema, Upper GI, Video Swallow, Voiding Cysto-urethrogram, and various other exams

*\*1<sup>st</sup> year students* will focus on and have the opportunity to complete sign offs and competencies on barium enema, upper GI exams, and esophagrams.

*\*2<sup>nd</sup> year students* will focus on and have the opportunity to complete sign offs and competencies on urethrograms, and various other exams

- With each rotation, students will continue to refine critical thinking skills and become more proficient in the performance of exams in various situations and altered patient conditions

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**EMERGENCY DEPARTMENT**

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*\*1<sup>st</sup> year students* will focus on and complete competencies on chest, abdomen, extremity and spine exams

*\*2<sup>nd</sup> year students* will focus on and complete competencies on Panorex, trauma spines, trauma extremities

- With each rotation, students will become more proficient in the performance of various exams on a variety of patient conditions, continue to develop critical thinking skills, and work on becoming more proficient with trauma situations.

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***RADIOGRAPHY RM 7***

Fluoroscopic exams include: Lumbar Puncture, Myelogram, Arthrogram, Feeding Tube placement, Bronchoscopy, and various other exams

Diagnostic exams include chests, spines, abdomens, extremities

*\*1<sup>st</sup> year students will:*

- Focus on observing various advanced exams to become familiar with patient care skills and communication regarding exam explanations.

*\*2<sup>nd</sup> year students will:*

- Focus on and have the opportunity to complete sign offs and competencies on Myelogram, ERCP, Bronchoscopies, Lumbar Puncture, Arthrogram exams
- Develop proficiency in performing "Time Outs", and patient explanations before and after various exams
- With each rotation, students will continue to refine critical thinking skills and become more proficient in the performance of advanced exams in a variety of situations and altered patient conditions

***RADIOGRAPHY RM 4***

Fluoroscopic exams include: Barium enema, Upper GI, Video Swallow, Voiding Cysto-Urethrogram, Lumbar Puncture, ERCP, Arthrogram, HSG, and various other exams

*\*1<sup>st</sup> year students will:*

- Focus on and have the opportunity to complete sign offs and competencies on barium enema, UGI, and esophagram exams
- Focus on observing various advanced exams and becoming familiar with patient care and explanations

*\*2<sup>nd</sup> year students will:*

- Focus on and have the opportunity to complete sign offs and competencies on Myelogram, Lumbar Puncture, Arthrogram exams
- Develop proficiency in performing "Time Outs", and patient explanations before and after various exams
- With each rotation, students will continue to refine critical thinking skills and become more proficient in the performance of advanced exams in a variety of situations and altered patient conditions

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<b>INTERVENTIONAL RMS 8, 9 &amp; 10</b>	<b>*2</b>
<p><i>*1<sup>st</sup> year students will:</i></p> <ul style="list-style-type: none"> <li>- Become familiar with a sterile environment</li> <li>- Learn to set up sterile trays</li> <li>- Learn to properly gown / glove for sterile procedures</li> <li>- Assist the Radiologist with gowning / gloving</li> <li>- Become more proficient with each rotation, regarding assisting with sterile procedures</li> </ul> <p>Prior to performing the above tasks, students are educated on:</p> <ul style="list-style-type: none"> <li>- Sterile technique and setting up sterile trays (Taught in Patient Care class during the 1<sup>st</sup> quarter)</li> <li>- Scrubbing for sterile procedures with the scrub technologist and Radiologist (Taught in Patient Care class during the 1<sup>st</sup> quarter)</li> <li>- Students must complete specific objectives with each rotation</li> </ul> <p><i>*2<sup>nd</sup> year students will:</i></p> <ul style="list-style-type: none"> <li>- Gain knowledge of interventional procedures including Central Venous Catheter placement, Angiography, Venogram, Biliary stent placement, Vertebroplasty exams, etc.</li> </ul> <p>After 2 weeks of rotation through the IR dept., students will be given the option to request more rotations in this area.</p> <p>Prior to any 2nd year rotations, students will have completed A&amp;P and have knowledge of the more complex IR procedures</p>	
<b>MOBILE RADIOGRAPHY</b>	
<p>Adult and Pediatric mobile procedures to include Chest, Abdomen, Upper and Lower Extremity and Spine exams</p> <p><i>*1<sup>st</sup> year students will focus on and complete competencies on chest, abdomen, and extremity and spine exams</i></p> <p><i>*2<sup>nd</sup> year students will focus on and complete competencies on spine and extremity exams</i></p> <ul style="list-style-type: none"> <li>- With each rotation, students will become more proficient and develop critical thinking skills, while adapting to altered patient conditions during non-routine exams</li> </ul>	

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***SURGERY***

*\* 1<sup>st</sup> year students will:*

- Become familiar with a sterile environment
- Observe and assist with C-Arm and Mobile Radiography
- Become more proficient with each rotation, regarding assisting with imaging during and after sterile surgical procedures
- Focus on and have the opportunity to complete sign offs and competencies on chest, abdomen, and extremity exams
- Complete the OR checklist for rotations 1 - 3
- Keep a log of all surgical cases he/she has observed
- Begin to develop an OR cheater book

Prior to performing the above tasks, students are educated on:

- Sterile technique  
(Taught in Patient Care Course during the 1st quarter)
- C-Arm and mobile radiography  
(Taught during the 1st quarter)
- Chest, Abdomen, Upper and Lower Extremity anatomy and positioning
- C-Arm inservice  
(Taught during 1st - 4th quarters)

*\* 2<sup>nd</sup> year students will:*

- Focus on and have the opportunity to complete sign offs and competencies on various C-arm exams
- Update the OR cheater book
- Continue to refine skills and become more proficient with each rotation

Prior to the 2nd year rotations, students will have completed Anatomy and Physiology, and Radiographic Procedures classes, which provide the groundwork necessary to understand the more complex procedures.

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## ***SANFORD CHILDREN'S HOSPITAL***

This hospital is located on the Sanford campus and is staffed by the Sanford Radiology Dept.  
Inpatient/Outpatient pediatric exams including chests, abdomens, UGI, BE, VCUG, and scoliosis

*\*1<sup>st</sup> year students* will focus on developing communication and patient care skills for pediatrics

*\*2<sup>nd</sup> year students* will complete competencies on pediatric chests, scoliosis, and VCUGs  
With each rotation, students will continue to refine critical thinking skills and become more  
more proficient with pediatric exams

## ***SPINE CENTER (Vandemark Building)***

This clinic is located on the Sanford campus and is staffed by the Sanford Radiology Dept.

*\*2<sup>nd</sup> year student* rotation

Students will learn to:

- Properly operate C-Arm
- Assist technologist with exam setup, completion, and cleanup
- Demonstrate proficiency and develop critical thinking skills by manipulating C-Arm equipment to best demonstrate the required anatomy for each procedure
- Network images

Prior to this rotation, the student will have completed education on:

- C-Arm operation
- Radiographic Procedures
- Spine anatomy

## ***OP ORTHOPEDIC CLINIC***

*\*2*

This clinic is located on the Sanford campus and is staffed by the Sanford Radiology Dept.

*\*2<sup>nd</sup> year students* will complete competencies on a variety of orthopedic exams.

and will become more proficient in the 1st year exams listed above

- With each rotation, students will continue to refine critical thinking skills and become more  
more proficient with outpatient orthopedic procedures

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## ***OUTPATIENT CLINIC (Vandemark) & ORTHOPEDIC WALK IN CLINIC***

This clinic is located on the Sanford campus and is staffed by the Sanford Radiology Dept.

MX Orthopedic exams, Outpatient fluoroscopic arthrogram exams

Outpatient Diagnostic Exams (Chest, Abdomen, Spines, Orthopedic exams)

*\*1<sup>st</sup> year students* will focus on and have the opportunity to complete competencies on chest, spines, extremities

*\*2<sup>nd</sup> year students* will complete competencies on Arthrogram (hip /shoulder) and skull work, and will become more proficient in the 1st year exams listed above

- With each rotation, students will continue to refine critical thinking skills and become more more proficient with outpatient procedures

## ***SANFORD HEART HOSPITAL***

This hospital is located on the Sanford campus and is staffed by the Sanford Radiology Dept.

Inpatient adult exams including chests, abdomens, and portacaths.

*\*1<sup>st</sup> year students* will assist with mobile exams during CVOR cases and become familiar with C-Arm setup

*\*2<sup>nd</sup> year students* will complete competencies on OR C-Arm Portacaths and continue to refine critical thinking skills and become more proficient with OR C-Arms

## ***SANFORD IMAGENETICS CLINIC***

This clinic is located on the Sanford campus and is staffed by the Sanford Radiology Dept.

Outpatient Diagnostic Exams (Chest, Abdomen, Spines, Orthopedic exams)

*\*2<sup>nd</sup> year students* will focus on and have the opportunity to complete competencies on headwork, other 2nd year competency exams

- With each rotation, students will continue to refine critical thinking skills and become more more proficient with patients in a clinic setting

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<b><i>SANFORD MEDICAL CLINIC 49TH &amp; OXBOW</i></b>	
This clinic is located off the Sanford campus	
Outpatient Diagnostic Exams (Chest, Abdomen, Spines, Orthopedic exams)	
*1 <sup>st</sup> year students will focus on and have the opportunity to complete competencies on chest, spines, orthopedic exams	
<b><i>SANFORD MEDICAL CLINIC 69TH &amp; MINNESOTA</i></b>	
This clinic is located off the Sanford campus	
Outpatient Diagnostic Exams (Chest, Abdomen, Spines, Orthopedic exams)	
*1 <sup>st</sup> year students will focus on and have the opportunity to complete competencies on chest, spines, orthopedic exams	
*2nd year students will focus on and have the opportunity to complete competencies on headwork, other 2nd year competency exams	
<b><i>Computed Tomography</i></b>	<b>3</b>
*All 2nd year students will complete 3 weeks of CT clinical assignment	
Prior to this rotation, the student will have completed education on:	
<ul style="list-style-type: none"> <li>- Cross-sectional anatomy</li> <li>- IV injection education (Patient Care course)</li> <li>- Formal CT class</li> <li>- Intravenous injection class and competency</li> </ul>	
CT competency is required	
CT objectives must be signed off	



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<b><i>Magnetic Resonance Imaging</i></b>	<b>2</b>
<p><i>*All 2nd year students</i> will complete 2 weeks of MRI clinical assignment</p> <p>Prior to this rotation, the student will have completed education on:</p> <ul style="list-style-type: none"> <li>- Cross-sectional anatomy</li> <li>- IV injection education (Patient Care course)</li> <li>- Formal CT class</li> <li>- Intravenous injection class and competency</li> <li>- On line MRI Safety competency</li> </ul> <p>Students will complete the screening form prior to this rotation</p>	
<b><i>Advanced Imaging Modalities (Optional Observations)</i></b>	<b>2</b>
<p><i>*To enhance student learning, all 2nd year students</i> are given the option to observe in developing imaging and / or therapeutic technologies</p> <p>2 weeks (10 days) may be divided between the various modalities listed below:</p> <ul style="list-style-type: none"> <li>- Ultrasound</li> <li>- Nuclear Medicine</li> <li>- Radiation Therapy</li> <li>- Mammography</li> <li>- Radiology Physician Assistant</li> <li>- Additional MRI</li> <li>- Additional CT</li> <li>- Addition IR</li> </ul> <p>Prior to this rotation, the student will have completed education on:</p> <ul style="list-style-type: none"> <li>- Cross-sectional anatomy</li> <li>- Imaging Procedures</li> </ul>	

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***Off Hour Rotations***

At the start of the 2<sup>nd</sup> quarter, in addition to the clinical assignments during the day, students will complete evening and weekend clinical student learning experiences. The assignments will be

- 1 pm to 9 pm (Monday through Friday) (This includes didactic class from 1 - 3pm and clinicals from 3 - 9pm)
- 3 pm - 11 pm (Saturday & Sunday)
- 12 am - 6 am (Saturday & Sunday)

During these assignments, students will be supervised by radiologic technologists, will be evaluated, and will have the opportunity to complete competencies. Off hour rotations **WILL NOT** exceed 25% of the total clinical hours. Approximately 10% of the student's total clinical hours are spent on evening and weekend assignments.

During these assignments, the student will continue to:

- Develop problem solving and critical thinking skills
- Gain experience and confidence in surgical radiography
- Gain experience and confidence in trauma radiography
- With each rotation, the student will continue to refine skills and become more proficient at adapting to altered patient conditions and stressful situations by:
  - \* Assessing the situation
  - \* Providing appropriate patient care
  - \* Communicating effectively
  - \* Making good decisions

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**OUTPATIENT CLINIC (Vandemark) & ORTHOPEDIC**

This clinic is located on the Sanford campus and is staffed by radiologists. The clinic performs MX Orthopedic exams, Outpatient fluoroscopic arthrograms, and Outpatient Diagnostic Exams (Chest, Abdomen, Spines, & Extremities).

*\*1<sup>st</sup> year students* will focus on and have the opportunity to perform exams on the

spines, extremities



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*\*2<sup>nd</sup> year students* will complete competencies on Arthro  
and will become more proficient in the 1st year exams  
- With each rotation, students will continue to refine ci  
more proficient with outpatient procedures

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**ORTHOPEDIC WALK IN CLINIC**

Directed by the Sanford Radiology Dept. |

on exams

Orthopedic exams) |

to complete competencies on chest,

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ogram (hip /shoulder) and skull work,  
listed above  
ritical thinking skills and become more