

# CyberKnife® Physics

Training for Physicists on the CyberKnife® Treatment Delivery System and the Accuray Precision® Treatment Planning System.

The CyberKnife Physics Course is designed for Medical Physicists responsible for performing commissioning and quality assurance (QA) tasks on the CyberKnife® Treatment Delivery System. This course provides an overview of clinical operation with in-depth instruction on commissioning procedures and routine QA tools and practices.

The course curriculum blends conceptual instruction with hands-on exercises to prepare Physicists for active involvement in the ATP as well as to perform routine QA tests. This course includes a brief introduction to the Accuray Precision treatment planning system as well as hands-on practice with the CyberKnife System. Completion of the course prepares the Physicist to perform the necessary commissioning and testing to ensure the system is ready for clinical use. Physicists who create clinical treatment plans are recommended to enroll in the CyberKnife Physics Complete Course.

This course meets core curriculum requirements for CyberKnife New System Implementation.

## COURSE OBJECTIVES

Upon completion of this course, attendees will be able to:

- Discuss the typical treatment workflow
- Summarize commissioning tasks
- Explain the clinical operation, safety considerations, and QA procedures
- Explain treatment delivery techniques for various targets

### COURSE FORMAT

Instructor-led presentations  
System demonstrations  
Hands-on labs

### COURSE PRE-WORK

Assigned online learning modules are designed to augment classroom curriculum

### DURATION

One (1) day remote +  
Five (5) days in classroom

### TARGET AUDIENCE

Medical Physicists

### PARTICIPANT BACKGROUND

Knowledge of the standards of practice in the field of radiation oncology

### NO CE CREDITS OFFERED

## SKILLS

Upon completion of this course, attendees will be able to perform the following tasks:

- Perform patient plan QA and dose verification
- Demonstrate alignment and tracking with different image guidance methods
- Monitor and evaluate treatment delivery
- Perform routine QA test procedures
- Perform CyberKnife commissioning operations

## Course Outline

Note: Course agenda is subject to change without notice.

### Week 1 (Friday: Remote course via Zoom)

#### DAY ONE

- Introduction to the CyberKnife System
- ATP Document Review
- Beam Data Acquisition
- Introduction to CyberKnife Planning for Physics
- Overview of the Accuray Precision® Treatment Planning and Data Management Administrative Functions
- General Plan Setup (Image import, fusion & contouring)

### Week 2 (Monday – Friday: In-Person course)

#### DAY ONE

- In-room overview of the CyberKnife System and Teach Pendant
- CyberKnife Physics Tools and Teach Pendant Review
- Water Tank Setup
- Beam Data Workbooks Review
- Precision Commissioning

#### DAY TWO

- Absolute Dose Calibration
- Patient Preparation
- Overview of CyberKnife Deliveries: Synchrony Skull, Synchrony Fiducial, Synchrony Spine, and Synchrony Fiducial and Lung with Respiratory Motion

#### DAY THREE

- Single Beam QA
- Film Scanner Calibration Check
- AQA testing
- E2E testing

#### DAY FOUR

- Laser to Radiation Field Alignment
- Imaging QA and Path Verification
- IRIS QA
- MLC QA

#### DAY FIVE

- Patient-specific QA
- Water tank setup & QA review