STATE BOARD FOR COMMUNITY AND TECHNICAL COLLEGES INSERT PRESENTATION DATE PROGRAM PROPOSAL BACHELOR APPLIED SCIENCE RADIATION THERAPY

BELLEVUE COLLEGE

TABLE OF CONTENTS

Cover Page — Program Proposal

Program Information

Institution Name: Bellevue College

Degree Name: Radiation Therapy

CIP Code: 51.0907

Name(s) of existing technical associate degree(s) that will serve as the foundation for this program:

Degree: AAS-T Allied Health

CIP Code: 510000

Proposed Start Implementation Date (i.e. Fall 2014): Fall 2025

Projected Enrollment (FTE) in Year One: 12

Projected Enrollment (FTE) by Year: 24

Funding Source: State FTE

Mode of Delivery

Single Campus Delivery: Didactic courses are on campus

Off-site: Students are assigned to an affiliated site for clinical portion (50% for years 3 and 4))

Distance Learning: Less than 20% of the core curriculum will be online or hybrid courses

Program Proposal

Please see criteria and standard sheet. ***Page Limit: 30 pages***

Contact Information (Academic Department Representative)

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Title: Program Chair, Faculty

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Email: linda.schinman@bellevuecollege.edu

Chief Academic Officer signature

The Program Proposal must be signed. To sign, double click on the signature line below.

11/6/2023

Criteria 1- Curriculum demonstrates baccalaureate level rigor.

Program Goals and Student Learning Outcomes

Program Goal One: Students will be clinically competent as entry level radiation therapists.

Student Learning Outcomes:

- Student will implement appropriate clinical procedures
- Student will apply principles of radiation protection to clinical practice
- Student will apply appropriate ethical and legal practices

Program Goal Two: Students/graduates will be able to effectively communicate in all aspects of radiation therapy.

Student Learning Outcomes:

- Student will demonstrate the ability to communicate effectively with members of the oncology team
- Student will demonstrate the ability to communicate effectively with patients

Program Goal Three: Students/graduates will be able to apply critical thinking and problem solving in analyzing radiation therapy scenarios.

Student Learning Outcomes:

- Student will demonstrate appropriate critical thinking skills and problem solving in clinical situations
- Student will demonstrate appropriate critical thinking skills and problem solving in didactic situations

Program Goal Four: Students will exhibit professional growth in the program and after graduation.

Student Learning Outcomes:

- Students will join the ASRT as student members
- Students will participate in the ASRT professional activities
- Graduates will continue as lifetime learners by maintaining their ARRT licensure

Bachelor of Applied Science in Radiation Therapy (BAS RADTX) Eligibility	
Students may qualify to apply with an AAS degree in allied health related field including all program requirements or equivalent transfer credits. Or students may be admitted with 68 equivalent credits that represent a combination of program required courses and other college-level credits.	
Eligibility	Cumulative GPA of 2.0 or higher, with a minimum grade of B in the following prerequisite courses: A&P, math, _____. At least 43 credits of general education requirements completed. A&P and math credits must be less than 5 years old. Math credits taken more than 5 years ago may be accepted based on Math placement test results (see Program Advisor).
Program Prerequisites (General Education or equivalent transfer credits) 43 Credits	ENGL& 101, 201 MATH Communication Humanities Social Science Anatomy & Physiology (A&P)
Program Prerequisites (the following or 24 equivalent transfer credits)	AHE 110, 120 (7 CR) RADTX 6 courses, (18 CR)

COURSE	TITLE	CREDITS
ENGL& 101	English Composition I	5
ENGL 201, ENGL 201 HSF	The Research Paper HSF: Health Science Focus (preferred)	5
Communications subtotal		10
MATH 130 MATH 138	Introduction to Statistics College Algebra for Business & Social Science	5

MATH 141	Precalculus I (especially if interested in dosimetry)	
Quantitative/Symbolic Reasoning subtotal		5
CMST 252	Communication in a Diverse Healthcare Workplace CMST 210, 250, 252, 280 or any qualified humanities course (must include interpersonal communication and cultural diversity topics)	5
Humanities subtotal		5
SOC& 101	SOC& 101, PSYC& 100, ANTH& 235 or any qualifying social science course. Suggested Ethics: PHIL 263, 265, 365	5
Social Sciences subtotal		5
BIOL& 160	General Biology w/Lab	6
BIOL& 241	Human Anatomy and Physiology I w/Lab	6
BIOL& 242	Human Anatomy and Physiology II w/Lab	6
Natural Sciences subtotal		18
Gen Ed total		43
AHE 120	Safety for Healthcare	2
AHE 110	Medical Terminology	5
RADTX 230	Radiologic Sciences Patient Care (Radon 120)	2
RADTX 260	Legal Issues in Radiologic Sciences (Radon 119)	3
RADTX 245	Cross Sectional Anatomy (Radon 127)	3
RADTX 246	Pathophysiology (Radon 150)	5
RADTX 231	Psychosocial Aspects of Cancer Care (Radon 130)	2
RADTX 247	Imaging and Processing in Radiation Oncology (Radon 106)	3
Prerequisite		24
Total Gen Ed + Prereqs		68

Previous Radiation Therapy AAS degree “RADON” courses are listed in blue font. New courses are labelled “RADTX”

First Year

Quarter 1 (fall)		Quarter 2 (winter)		Quarter 3 (spring)		Quarter 4 (summer)	
ENGL& 101	5	ENGL 201 (HSF)*	5	MATH 130, 138 or 141	5	Social Sciences	5
BIOL&160	6	BIOL& 241	6	BIOL& 242	6	CMST 252	5
AHE 100** Introduction to Healthcare	5	AHE 110 Medical Terminology**	5	RADTX 230 Radiologic Sciences Patient Care	2		
Total	16	Total	16	Total	13	Total	10

*Health Science Focus (HSF)

**required for certificate and Allied Health AAS-T degree. Two (2) of the 5 certificates are mapped for examples: “Clinical Laboratory Assistant Track” and “Phlebotomy Technician Track” Also note BIOL 108 is the minimal requirement for Allied Health certificate and/or degree. The BIOL series of 3 above is the minimal requirement for BAS degree in Radiation Therapy.

Second Year							
Quarter 1 (fall)		Quarter 2* (winter)		Quarter 3 (spring)		Quarter 4 (summer)	
RADTX 260 Legal Issues in Radiologic Sciences (Medical Law and Ethics AHEA 100 (3 cr)**	3	RADTX 245 Cross Sectional Anatomy	3	RADTX 246 Pathophysiology	5		
RADTX 247 Imaging and Processing in Radiation Oncology	3	RADTX 231 Psychosocial Aspects of Cancer Care	2				
AHE 120 Safety for Healthcare**	2	And/or phlebotomy and CLA** (5 credits each win/sum)	5	And/or phlebotomy externship and advanced CLA** (10 credits total)	5		
Total	8	Total	10	Total	10	Total	0

Pathways:

Student chooses one or more of the following:

Apply to BAS RADTX program (apply in winter quarter for fall quarter start), student needs to complete degree prerequisites by second year quarter 3 prior to interview. (except AHE 120 may be completed summer prior to RADTX 311 taken during fall qtr)

Complete one Certificate for Allied Health AAS-T degree – 5 administrative or clinical options (for a list of 5 see "Program of Study Allied Health, AAS-T - Bellevue College". Two (2) of the 5 certificates are mapped above as an example. Clinical Laboratory Assistant Track and Phlebotomy Technician Track

Pursue AAS-DTA (see AAS-DTA worksheet) if changing to another pathway

Apply to other Imaging Science degree programs AA or BAS dependent on eligibility.

Other AAS degree Imaging Science programs with similar prerequisites are: Radiologic Technology, Ultrasound, Nuclear Medicine, and Neurodiagnostic Technician.

BAS degrees that currently accept the Allied Health AAS-T degree as a prerequisite: Healthcare Informatics (HCI), Healthcare Management and Leadership (HCML) and Health and Wellness (HPE).

Junior and Senior Radiation Therapy BAS degree curriculum

Previous Radiation Therapy AAS degree "RADON" courses are listed in blue font. New courses are labelled "RADTX"

RADTX 320	Principles of Oncology (Radon 100)	4
RADTX 330	Principles & Practice of Radiation Therapy I (Radon 105)	2
RADTX 430	Principles & Practice & Research of Radiation Therapy II (Radon 220)	3
RADTX 431	Principles & Practice & Research of Radiation Therapy III (Radon 221)	3
RADTX 432	Principles & Practice & Research of Radiation Therapy IV (Radon 222)	3
RADTX 291	Special Topics in Radiation Therapy (Radon 194)	1-5
RADTX 340	Radiobiology (Radon 240)	3
BIOL 312	Biology of Cancer	5
HCML 460	Management and Leadership in Healthcare	5
RADTX 341	Radiation Therapy Quality Assurance, Safety and Protection	2
RADTX 350	Radiation Therapy Physics I (Radon 104)	3
RADTX 450	Radiation Therapy Physics II (Radon 201)	3

RADTX 370	Principles of Dose Calculation (Radon 101)	4
RADTX 375	Principles of Simulation (Radon 115)	2
RADTX 470	Treatment Planning I (Radon 202)	3
RADTX 471	Treatment Planning II (Radon 203)	5
RADTX 472	Treatment Planning III (Radon 204)	5
RADTX 311	Clinical Practice I (Radon 111)	5
RADTX 312	Clinical Practice II (Radon 112)	5
RADTX 313	Clinical Practice III (Radon 113)	5
RADTX 314	Clinical Practice IV (Radon 114)	12
RADTX 411	Clinical Practice V (Radon 211)	8
RADTX 412	Clinical Practice VI (Radon 212)	8
RADTX 413	Clinical Practice VII (Radon 213)	8
RADTX 414	Clinical Practice VIII (Radon 214)	12
RADTX 489	Concept Integration (Radon 224)	1
RADTX 299	Individual Study in Radiation Therapy Technique (Radon 199)	1-5
RADTX 399	Individual Study in Radiation Therapy Technique (Radon 299)	1-5
Total	Junior and Senior Curriculum	120
Total	Prerequisites + Junior and Senior Curriculum	188

BAS First Year (Junior)							
Quarter 1 (fall)		Quarter 2 (winter)		Quarter 3 (spring)		Quarter 4 (summer)	
Principles of Oncology	4	Principles & Practice of Radiation Therapy I	2	Radiation Therapy Physics I	3	Clinical Practice IV	12
Special Topics in Radiation Therapy	1-5	Principles of Dose Calculation	4	Principles of Simulation	2		

		Radiobiology	3	Biology of Cancer	5		
Healthcare Management and Leadership	5	Radiation Safety, Protection and Quality Assurance	2	Clinical Practice III	5		
Clinical Practice I	5	Clinical Practice II	5				
Total	15	Total	16	Total	15	Total	12

BAS Second Year							
Quarter 1		Quarter 2		Quarter 3		Quarter 4	
Principles & Practice & Research of Radiation Therapy II	3	Principles & Practice & Research of Radiation Therapy III + (Research Methods)	3	Principles & Practice & Research of Radiation Therapy IV + (Research Methods)	3	Clinical Practice VIII	12
Radiation Therapy Physics II	3	Treatment Planning II	5	Treatment Planning III	5		
Treatment Planning I	3			Concept Integration	1		
Clinical Practice V	8	Clinical Practice VI	8	Clinical Practice VII	8		
Total	17	Total	16	Total	17	Total	12

All course descriptions are in Appendix A.

Improvements to curriculum, from AA to BAS

In the current AA degree structure, we teach more than students pay for and they learn more than they get credit for. BAS degree corrects for this curriculum, tuition and credit load misalignment.

Previously students spent 3+ years taking prerequisites and core courses. The BAS maps out a 4-year plan to include prerequisites with additional pathway options for those who do not get accepted into the Radiation Therapy Program.

General Education improvements:

CMST 252 “Communication in a Diverse Healthcare Workplace” specifically for students pursuing health science professions. This course meets cultural and diversity requirements and emphasizes interpersonal skills. This single course meets the communication requirement where previously there were two courses.

ENGL 201 HSF The Research Paper with Health Science Focus (HSF) will prepare for evidence-based research in RADTX 430-432.

Pathways:

Student chooses one or more of the following:

- Apply to BAS RADTX program (apply in winter quarter for fall quarter start), student needs to complete second year quarter 3 prior to interview.
- Complete one Certificate for Allied Health AAS-T degree – 5 administrative or clinical options (see “Program of Study_ Allied Health, AAS-T - Bellevue College”
- Pursue AAS-DTA (see AAS-DTA worksheet)
- Apply to other Imaging Sciences degree programs AA or BAS dependent on eligibility. Other AAS degree imaging science programs with similar prerequisites are Radiologic Technology, Ultrasound, Nuclear Medicine, and Neurodiagnostic Technician.
- BAS degrees that currently accept the Allied Health AAS-T degree as a prerequisite: Healthcare Informatics (HCI), Healthcare Management and Leadership (HCML) and Health and Wellness (HPE).

Summary of improvements to Radiation Therapy curriculum:

- Research methodology and analysis integrated into Principles and Practice RADTX 430-432.
- Interprofessional Education (IPE) integrated into second year clinical courses RADTX 411-414. IPE will include topics centered on advanced and emerging technologies such as automation and Artificial Intelligence (AI). Cohorts will collaborate with other healthcare professionals to strengthen their understanding and interprofessional relationships on these topics.
- New course: Radiation Quality Assurance and Protection

Program evaluation criteria and process

Bellevue College uses a multifaceted approach to program review to ensure continuous improvement. Table 1 shows the multiple methods that will be used to evaluate the Bachelor of Applied Science in Radiation Technology program and curriculum, and what each method will assess.

Table 1: Program Assessment

Effectiveness of curriculum/program — continuously refines curriculum and program design, keeping the program current, including discipline-based, general education and electives	
Course evaluations by students- Quarterly	Effectiveness of curriculum & teaching methods in courses Effectiveness of program in skills & knowledge progression
Student evaluations by clinical preceptors - Quarterly	Effectiveness of the program in skills & knowledge progression Adequate balance of knowledge & skills, theory & practice Effectiveness of program in meeting students' expectations Effectiveness of institutional and program resources and support
Program Review- Every 5 years	Student retention Student course success Student progression through program Correlation of student success and training/job experience prior to entry
Program 5 year assessment plan	Outcomes are aligned with program goals. Data is collected from a comprehensive set of sources to include course assessments, student clinical skills evaluation, program effectiveness data (board pass rates, completion rates, employment rates), graduate and employer survey.
Program Effectiveness and Viability- Annually	Enrollment rates Faculty/student ratio Financial data Board pass rates Completion and employment rates
BAS program faculty- performance evaluations, tenure	Preparedness and effectiveness of faculty
Graduate follow-up and industry feedback — assesses effectiveness of program in meeting career goals and employer expectations and uses findings to refine curriculum and teaching methodologies	
Program Graduate survey - annually	Effect of program completion on career Effectiveness of program in meeting job expectations Wage and career progression

Employer survey of program and graduates	Effectiveness of program in meeting job expectations Observed skills and performance Perceived strengths and weaknesses of current program
Oversight by Advisory Committee – provides ongoing support and assists in student selection process and program review	
Program Advisory Committees – Twice a Year	Completeness & relevance of curriculum to employer needs Trends in field, technologies, practices and job markets

Assessment for the proposed Bachelor of Applied Science program is based on the comprehensive student achievement and program assessment processes in place at Bellevue College for all programs, including associate and baccalaureate degrees. Program review occurs every five years and provides a thorough assessment of every aspect of the program. This peer-review process closely aligns with the College's core themes of Student Success, Teaching and Learning Excellence, College Life and Culture, and Community Engagement. The data-informed process asks the program chair and faculty to review key metrics on student success and enrollment, providing analysis and action plans for improvement.

The college's 5-year program review will evaluate the Bachelor of Applied Science program's effectiveness by collecting and analyzing data on student satisfaction, preparedness, and retention; faculty assessment of student preparedness; and effectiveness of courses to meet the program outcomes.

Additionally, the program has a comprehensive 5-year assessment plan for accreditation compliance. The three components of this plan are Data Review, Data Analysis and Continuous Improvement Process.

Data Review: Data is shared and discussed during annual advisory meetings. Data includes scores from measurement tools including clinical evaluation, student treatment planning assessment, instructor course assessment, results from graduate and employer surveys (issued alternate odd years), and effectiveness data reported to JRCERT. Any discussions regarding the assessment plan are documented in the meeting minutes. The corresponding meeting dates are noted on the assessment plan in the "Data Analysis" section. During meetings, the program chair points out areas needing discussion by sharing their desktop. A copy of the entire 5-year assessment plan, meeting agenda and previous meeting minutes are disseminated to the advisory committee members via email prior to or on the meeting date.

Data Analysis: A copy of the 5-year assessment plan will be shared with the advisory committee no less than once annually and will be noted in the minutes.
Other student learning outcome data shared: Employer and graduate surveys, ARRT score report and Program Effectiveness data

Process for continuous improvement: Data will be reviewed annually when entered into the 5-year plan. The role responsible for reporting data is listed for each outcome on the assessment plan. The data will be reviewed for trends when comparing benchmarks to results. Where benchmarks do not meet results, those areas will be added to the spring or fall advisory meetings for discussion. Where benchmarks are exceeded for three or more cohorts, those areas will be reviewed to consider assessing a different outcome. The program and advisory committee will make any necessary changes prior to the next cohort (alternate even year enrollment). Changes will be noted on the assessment plan, in meeting

minutes and any corresponding measurement tools. A minimum of 4 outcomes will be revised or changed every 4 years.

The program advisory committees provide an opportunity for college faculty to learn from and engage with industry leaders as these professionals review the curriculum and program elements on a regular basis. The advisory committees will be expanded from the current 2-year degree advisory committees to better serve the expanded outcomes and scope of the Bachelor of Applied Science. The role of these committees will be to advise the program on recommended curriculum improvements; help keep the program abreast of changes in the field; assist in student recruitment and placement; and make recommendations for other changes that will keep the program current.

Criteria 2- Qualified faculty.

Provide a profile, including education credentials, of anticipated faculty (full-time, part-time, regular, continuing) that will support the program for each year (junior and senior). Include faculty needed to cover the technical course work, general education courses and electives. In addition, provide the total faculty FTE allocated to the program.

Faculty and administrators responsible for technical courses must meet certification requirements for professional and technical administrators and instructors in the Washington Administrative Code.

The faculty for the program meets JRCERT minimum qualifications.

Radiation Therapy Professional Technical Degree			
	Name	Faculty qualifications and credentials	Program or Department
FT	Linda Schinman	MBA, CMD, RT(T)	RADON, DOSM
FT	Subramanya Betageri	BS, DRTT, R.T.(T)(ARRT) (Master's in progress)	RADON
adjunct	Linda Schoenfeld	RT(T), CMD	RADON, DOSM
adjunct	Rachel Jacobs	BS, RT(T) (MBA in progress)	RADON
adjunct	Krista Loutsis	RT(T)	RADON
adjunct/RATEC	Sheere Zupan	BAS, RT	
adjunct/RATEC	Kris Miller	BA, RT (M)	
adjunct	Victoria Space	BAS, RT(T), CMD	RADON
adjunct	Jenna Butler	PhD	RADON
Allied Health Professional Technical Degree			
	Name	Faculty qualifications	Program or Department
FT	Ann Minks		AHE
FT	Peter Prescott		PE, AHE
FT or adjunct	Miranda Kato		AHE
FT or adjunct	LeAnne Leed		AHE
FT or adjunct	Jean Lawler		AHE
FT or adjunct	Erica Ferreri		
General Education Shared Courses			
FT or adjunct	Determined by chair		ENGL
FT or adjunct	Determined by chair		MATH
FT or adjunct	Determined by chair		BIOL
FT or adjunct	Determined by chair		CMST
FT or adjunct	Determined by chair		PHIL
FT or adjunct	Determined by chair		PHY
FT or adjunct	Determined by chair		Social Science
FT or adjunct	Determined by chair		Humanities

Criteria 3- Selective admissions process, if used for the program, consistent with an open-door institution.

Describe the selection and admission process. Explain effort that will be used to assure the program serves as diverse a population as possible. Include specific detail for selecting and students for admittance when there are more applicants than available seats in the program.

Any candidate who has fully completed the program application and has received a 3.0 (B) or better in each of the prerequisite courses will receive an interview, so long as those courses are completed by the end of Winter quarter of that year. The purpose of the interview is to determine the applicant's readiness to begin the program, general understanding of the profession, and their skill in communication, conflict resolution, and critical thinking.

Selections are made by a committee formed by volunteer faculty and clinical preceptors affiliated with the program. If there are more applicants than seats, the committee ranks the candidates in order based on the below factors. The program clinical placement yearly limit is determined by the number of affiliated clinics willing to take a student.

Diversity of candidate pool is maintained by recruitment efforts through discovery days, a recruitment round table, and information sessions. A consistent set of questions and rubric makes the interview objective and reduces bias of the interviewers.

Factors involved in student selection:

- The number of affiliated clinics willing to take a student.
- Applicants' interview score. The score is calculated using 6-8 questions and a preapproved rubric. All applicants are asked the same set of questions.
- Applicants' prerequisite GPA
- Applicants' math and reading comprehension assessment score
- Radiation oncology department observation

Student acceptance and clinical placement are contingent upon JRCERT clinical site approval, completion of program prerequisites, transfer credits, background check, immunization status and any other clinical onboarding documentation. All clinical placements are assigned by the program Clinical Coordinator.

Criteria 4- Appropriate student services plan.

Describe services that will be needed by the students admitted to the degree program and college plan for providing those services for baccalaureate level students. Include a description of financial aid services and academic advising for student admitted into the program.

As a community college, one of Bellevue College's strengths is the variety of student-focused support services that help students achieve success and accomplish their goals. Students in the Bachelor of Applied Science in Radiation Therapy program will be supported by the same high-quality student services that all students receive.

As Bellevue College has added new applied baccalaureate degrees, the college has focused on integrating support for baccalaureate students across the institution. For example, additional FTE has been added to enrollment services to provide transcript evaluation for incoming applied-baccalaureate students. Beginning in academic year 2013-14, the library has added 1 FTE librarian assigned specifically to the bachelor's degree programs, providing another institutional touch point for students.

Data has shown, at least 50% of students in the current BAS programs at Bellevue College are

working and may have needs for alternative scheduling. Most of the Bachelor of Applied Science in Radiation Therapy program classes are currently offered or will be offered (new courses in the degree) in person, with a few hybrid. The clinical setting is off campus. The program manager is the primary point-of-contact for students, from before admission, through the program. This primary-point-of-contact model has worked well in Bellevue College's other applied baccalaureate degrees, and the college plans to continue it for future degrees.

To provide convenient access to all students, Bellevue College has numerous services available electronically, including quarterly online registration; online tutoring; 24/7 access to librarians through "ask a librarian"; extensive research databases suitable for baccalaureate-level research; and degree audit and transcript requests.

For face-to-face connection with all students, many services have evening and/or weekend hours, including the academic success center, math lab, writing lab, computer labs, science study center, counseling center, financial aid, the library, and extended testing hours at the disability resource center.

The following services will be those most frequently used by baccalaureate students.

Student Advising

The model that has worked well for the college's baccalaureate programs and will be used for the proposed degree is an embedded program manager who works one-on-one with students to facilitate their success. The program manager assists students with their educational planning and progress towards degree completion. The program manager and program chair consult regularly about each student's progress. Student retention and success are the college's top priorities. Students appreciate and respond well to having a specific person to go to for assistance. Program faculty will work with students who need additional assistance to develop personalized student success strategies.

Student Advising

Advising as a technique to increase the diversity of the student body and to retain students, begins long before a student begins the program. Several forms of advising and assistance are available to prospective students. On the program website there is a link for inquiries, monthly program information sessions provide an overview of the program and application process. Additionally, a virtual information session has been created and will be published on the website soon. To ensure fairness, all students must complete the same application and follow the same process.

Local clinics allow students to observe the professionals at work so they can get a good idea of what the job entails. The program is a big commitment, and our objective is to inform the students as much as possible, so they make good decisions towards their career goals. The program chair and manager review transcripts to advise students on what is needed to complete an application to the program. Reviewing transcripts is part of advising and requires a great amount of time. Once students begin the program, they receive quarterly advising for both didactic and clinical progress. Some students may struggle in one area or the other. If so, they will meet with the chair and clinical coordinator to discuss options. Sometimes students need to step back from clinical and focus on didactic work. Any missed clinical time is made up with a program extension. Some students struggle in clinic. They also meet with program officials to mediate any professional issues. Students are referred to counseling for behavioral issues. Students who have had issues in the past were able to

remedy the situation and continued on to graduate. Students receive face to face advising while in clinic during quarterly observation. During this time, progress is reviewed, feedback is given, and goals are discussed. Students receive midterm evaluations so they have time to improve before the final evaluation at the end of the quarter. Additionally, the chair or clinical coordinator meet with each student in the program at the end of the quarter to discuss overall progress. At the end of each the quarter, the chair will see half the students and the coordinator sees the other half. These conferences give students a chance to raise any program concerns. Lastly, the two cohorts select a second-year student representative to attend program advisory meetings. The representative brings any student concerns to committee during these meetings. The student representative also relays back to the cohorts any important information gained from the program advisory meeting. This high touch model of advising students, and early intervention when problems arise, leads to the almost 100% retention of students of color and low-income students.

Current advising practices within the program are robust. The program completion rates support the integrity of these practices. The 5 year average program completion rate is 98%.

Academic Success Center (ASC)

The Academic Success Center assists students with successfully completing their college courses through one-on-one and group tutoring, workshops, classes, and open labs in reading, writing and math. As needed, additional tutors in the Academic Success Center, will be hired to meet the needs of students in higher-level Bachelor of Applied Science courses

Computer Labs

Bellevue College provides a wide variety of specialized computer labs to enhance learning and student success as well as a 200-computer open lab.

The program has specialized equipment including a Virtual Environment Radiation Therapy (VERT) simulator on campus and 7 treatment planning workstations.

Credentials Evaluation

Full-time credentials evaluators have extensive experience evaluating transcripts from accredited institutions. Incoming students are evaluated for compliance with admission requirements and student records for all degree requirements when students are near graduation. Bellevue College is committed to providing efficient time-to-degree for students and makes every effort to accept prior learning when appropriate.

Disability Resource Center (DRC)

The DRC provides assessment and accommodation for students with documented disabilities. Services provided include special course materials; testing coordination for disabled students and faculty assistance to provide appropriate accommodation.

Financial Aid

The financial aid office prepares and disburses federal, state, and institutional aid for all Bellevue College students. Students can monitor the progress of their application online.

Job Placement

Providing help with career advancement and job placement will be priorities for this program. An effective advisory committee comprised of healthcare employers will help to identify jobs. Through the clinical internship, students will develop potential job contacts. Additionally, the Center for Career Connections at BC has been successful in helping students find jobs by providing career planning and job placement assistance and conducting career fairs. The Center for Career Connections, Program Chair, and Advisory Committee will work closely to develop and nurture internship and job placements.

Clinical instruction begins the 5th week and continues until graduation. Students rotate to a new clinical site every 2 quarters or 4 times in 2 years. This will continue with the BAS degree. Most graduates are hired by clinics where they were assigned while in the program. The clinical portion is often viewed as a two-year job interview.

Multicultural Student Services (MCS)

Multicultural Student Services offers advising, mentoring, tutoring, emergency financial assistance, and support for the college's multicultural student population.

Online Services

All students have online access to the bookstore, records and grades, registration, advising, faculty communication, and library services. As an example of integrated services, the library has added extensive online collections and resources. Library faculty have also developed upper-division research workshops for students in applied baccalaureate programs. The distance education office provides extensive technology assistance and student services for all online students.

TRiO

Students who are first-generation college, low-income, or have a documented disability receive academic and personal support through TRiO. Services include tutoring, study skills, advocacy, and laptop computer lending. The Department of Education has approved extension of this program to all bachelor's degree students who fit eligibility criteria.

Veteran's Administration Programs

The Veterans Affairs Office assists all eligible veterans, reservists, dependents, and VA chapter 31 students. Bellevue College has recently hired a Director of Veteran's Office to better support out veterans and their families.

Criteria 5 - Commitment to build and sustain a high-quality program.

Bellevue College has been the sponsoring institution for the Radiation Therapy Program for over 35 years. The Bachelor of Applied Science in Radiation Therapy will be state-support funded.

Projected Program Expenses and anticipated revenue

Most Professional Technical degrees are selective admissions and do not generate as much tuition as Gen Ed. Prof Tech programs generally aim to break even in terms of operational costs and revenue. The Radiation Therapy Program currently does not break even. The goal of breaking even will remain for the BAS degree. A projected budget indicates this may be possible but is largely dependent upon enrolment, which is limited due to several factors.
Program admissions or enrollments are based on several factors including: accreditation standards, effectiveness data, job supply and demand, clinical capacity.
The BAS degree will generate more revenue from tuition than from the current AA degree. This increase is a result from Converting 100-200 levels courses to 300-400 level and new pathways that will generate more Gen Ed and Allied Health enrollments.

In the BAS degree budget, a substantial amount of tuition will be generated from the first two years of Gen Ed and prerequisites from Allied Health AHE(A) and Radiation Therapy (RADTX). Even though the Radiation Therapy Program will not get credit for tuition from recruiting students who will take the required Gen Ed prerequisite courses. It is important to recognize that the number of students recruited from the new pathways will generate an estimated tuition of $120,000-$125,000 annually. (This is not included in the table) Even though the BAS degree won't be a break-even program it will save the college about $120,000 annually. Increasing enrollment would allow the program to break even but several factors need to be carefully considered in order to increase enrollments. The program must continue to meet job supply and demand without overflooding the market. It must have the capacity for clinical placements and remain in compliance with accreditation standards. The JRCERT accreditation standard states: "Job Placement: The number of graduates employed in the radiologic sciences compared to the number of graduates actively seeking employment in the radiologic sciences within twelve months of graduating. The five-year average benchmark established by the JRCERT is 75%." In order to break even the program would need to increase annual enrollments from 12 to 15 students per year.

Table Projected Program Enrollment, Staffing, Revenue, and Expenses

Table I: BAS in Radiation Therapy Enrollment Projections						
Year	Current	1	2	3	4	5
	2024-25	2024-25	2025-26	2026-27	2027-28	2028-29
BAS Headcount year 1 and 2	22	20	20	25	30	30
BAS Headcount year 3 and 4	N/A	24	24	24	24	24
FTES						
Graduates	10	12	12	12	12	12
Table II: BAS in Radiation Therapy Estimated Program Expenses						
Year	Current	1	2	3	4	5
	2022-23	2023-24	2024-25	2025-26	2026-27	1027-28
Program Manager 0.5 FTE		37,500	39,000	41,500	43,000	44,500
Full Time Faculty 2.0 FTE	180,000	200,000	206,000	212,000	218,000	222,000
Benefits (1)	78,000	79,000	80,000	81,000	82,000	83,000
Adjunct Faculty	45,000	57,000	59,000	61,000	64,000	67,000
Program Chair release time 0.33%						
Stipends	3,500	3,500	4,500	5,000	6,000	7,500
Goods and Services (2)	1,200	1,200	1,200	1,200	1,200	1,200
Travel (3)	2,200	2,200	2,200	2,200	2,200	2,200
Equipment (4)	13,000	16,000	13,000	13,000	13,000	13,000
Indirect (5)	3,000	5,000	4,500	3,500	3,500	5,000
Totals	325,900	363,900	370,400	378,900	389,900	400,900
\S in Radiation Therapy Estimated Income						
Tuition Year 2 RADTX only		42,020	45,500	49,000	52,500	56,000
Tuition (current AA, projected BAS)	132,000	236,400	240,000	244,000	248,000	252,000
Fees						
Contributions and Grants	20,000	20,000	20,000	15,000	15,000	15,000
Totals	152,000	298,420	305,500	308,000	315,500	323,000
Deficit	173900	65480	64900	70900	74400	77900
(1) Benefits						
(2) Goods and Services: printing course materials, marketing materials						
(3) Travel: Clinical Observations mileage, lodging, attend conferences						
(4) Equipment: Virtual Environment lab, Treatment Planning computers, Dosimeter badges						
(5) Indirect: Accreditation fees						
Cut expenses $8,000 by discont service contract for computers and change to Instadose badges						

Appropriate Facilities

The Bellevue College campus is a wooded 120 acres. The campus landscape is enhanced by more than 20 buildings, including two Gold LEED certified buildings. There are four computer labs dedicated to students in the Institute for Business and Information Technology, the division in which this BAS resides. There is a dedicated BAS librarian who provides services for BAS students and faculty.

Appropriate equipment, technology, and instructional resources needed for the program

The facilities, equipment, technology, and instructional resources needed for the BAS Radiation Technology program are currently in place for the AA level program. The Bellevue College Library includes a dedicated librarian for BAS programs with a dedicated budget for obtaining appropriate BAS level library resources.

The Radiation Therapy Program has a dedicated classroom and lab located in the health sciences T Building on campus. The lab includes specialized equipment for hands on learning including seven (7) treatment planning workstations and a linear accelerator simulator also known as "VERT" for Virtual Environment Radiation Therapy.

Document the college's ability to sustain the program over time

Bellevue College is committed to and supportive of bachelor's degrees at the College. Evidence of this is the fact that the College has 13 bachelor's degree programs, currently more than any of the other community and technical colleges in the state of Washington. Each of Bellevue College's bachelor programs has a program manager.

Unlike general education, most faculty for health science programs are recruited from hospitals and clinics. While it is difficult to recruit clinical staff to become educators. The BCAHE union has done a good job improving salaries over the past decade. The salaries are getting closer to what professionals earn working in a local hospital or clinic. Additionally, Radiation Therapy is considered a high demand profession therefore, faculty in this field receive a high demand stipend which assists in recruitment and retention.
Bellevue College bachelor's enrollments are the bright spot on the enrollment dashboard as enrollments for bachelor's degrees at Bellevue College are increasing.

Criteria 6- Program specific accreditation.

Bellevue College is accredited by Northwest Commission on Colleges and Universities (NWCCU) and the Radiation Therapy Program is currently accredited by Joint Review Committee on Education in Radiologic Technology (JRCERT). The program accreditation status as of October 2023:

Most recent site visit: July 2016

Accreditation award granted for maximum 8 years: Dec 2016

Interim report: September 2020

Maintenance of accreditation granted: April 2021

Self-study due: January 2024

Next site visit: third quarter of 2024

Standard One Objective 1.7 states the sponsoring institution is responsible for granting the terminal award. The program must make a formal request to make any changes to a degree.

The program will make a request for "substantive change" to JRCERT prior to implementation of new

BAS degree if approved by SBCTC.

Bellevue College has had accreditation from NWCCU for Baccalaureate degrees since 2009. The College will file a change document with NWCCU when this program is approved by the State Board to accredit it specifically.

Criteria 7- Pathway options beyond baccalaureate degree.

Describe opportunities and articulation agreements for the place bound baccalaureate graduate to continue their education onto a graduate (Master's) degree program. Detail specific discussions with public and private baccalaureate institutions (when applicable) regarding post-baccalaureate pathways for graduates.

Historically, the Radiation Technology program has had a 100% job placement rate upon graduation. We anticipate this will continue in the BAS program. If students choose to go on to further education, they have options, mostly in Healthcare Management, so that they can progress in their careers to managers in their hospitals or clinics. Some of the options they have include:

- Western Governor's University: MBA in Healthcare Management https://www.wgu.edu/online-business-degrees/mba-masters-business-administration-healthcare-management-program.html
- WGU online learning modality is designed for working professionals.
- University of Washington: master's in healthcare administration UW Healthcare Administration
- Eastern Washington University: MBA in Health Services Administration EWU MBA program is online

The BAS degree will provide the basis for those who want to continue on to master's level studies in health care management, administration, educational professors or program officials.

Criteria 8- External expert evaluation of program.

Two external subject matter experts were selected to review the BAS degree program proposal. The external experts come from university level institutions. Dr. Megan Trad is the Interim Associate Dean - College of Health Professions and Chair & Professor for the Radiation Therapy Program at Texas State University Round Rock Campus. Mrs. Tracy White is Program Director of Radiation Therapy and Associate Professor of Medical Imaging and Radiation Sciences at Arkansas State University - Jonesboro.

Both reviews are excellent overall. One reviewer pointed out the high demand for radiation therapists which exists across the country. Furthermore, employers expect "high quality critical thinkers in our ever-changing technology driven field". Not only are radiation therapists in demand but the profession is demanding a bachelor's degree for entry level. This is especially true across the globe. "In European countries, bachelor's degree programs are the entry level. The United States will soon have to move to the bachelor's degree as entry level as well, based on projections for the next 5-10 years."

The reviewers agreed that the proposed curriculum is appropriate for a bachelor's degree level, it is progressive and in a logical order. The curriculum aligns with topics on the licensing exam. A reviewer believes: "Transitioning to a bachelor degree program with research infused curriculum will prepare students who wish to pursue graduate degrees."

Topics that were of special interest to the reviewers included research, more advanced critical thinking skills, and leadership experience. These topics are in fact integrated into the BAS degree curriculum. Research methodology is integrated into the RADTX 430-432. One of the reviewers felt it would be better to define where the production of research should occur within the curriculum. As a result, a portion of the course description for the RADTX 430-432 series was subsequently modified to state: "The student will produce scholarly case studies using professional research methodology and critical analysis."

"New radiation therapy graduates must master many skills in order to meet the demand of the current state of the field. These include having a firm foundation of the history of radiation therapy, becoming competent in a variety of clinical skills, developing critical thinking skills, as well as developing as a compassionate and empathetic healthcare provider. Because of the enormity and breadth of the topics and characteristics that must develop, there is push from the radiologic science community to make the bachelor's degree the minimum degree to be eligible to take the credentialing exam. Implementing this change prior to that being enforced will set Bellevue College up for longevity and ensure that your program is the program of choice for the Pacific Northwest."

As prompted, the minimum requirements for faculty to teach in a BAS degree program were reviewed.

BC requirements for full time and adjunct:

Full time and adjunct faculty meet the JRCERT minimum requirements.

Additionally, a subsequent modification has been made to the program goals based on the reviewer's recommendation. The reviewer suggested that for program goal #4 outcome #3 be revised to something easier to track.

Instead of " Graduates will continue with their formal education." The outcome will be: "Graduates will continue as lifetime learners by maintaining their ARRT licensure."

Program Goal #4: "Students will exhibit professional growth in the program and after graduation."

Student Learning Outcomes:

- Students will join the ASRT as student members
- Students will participate in the ASRT professional activities
- Graduates will continue as lifetime learners by maintaining their ARRT licensure.

Copies of the external evaluators' reports are provided in the appendix along with their bio or resume.

Appendix A- Curriculum

General Education Courses

ENGL& 101 - English Composition I - 5 CR

Course Description: Develops clear, effective writing skills and emphasizes writing as a process. Students practice writing in a variety of forms and modes.

Prerequisite(s): Placement by assessment or ENGL 92or ENGL 93 with a C- or better.

Course Outcomes

• Think Critically and Read Analytically: carefully interpret and evaluate claims, beliefs, arguments or issues, reading various texts critically for purposes of interpretation, analysis, synthesis, or evaluation.

• Compose and Revise in Context: shape written responses for–and employ style, tone, and mechanical conventions appropriate to–the demands of different audiences and purposes, using various methods of development such as illustration, comparison and contrast, and analysis, and balancing their individual voices with those from other texts.

• Reflect, Collaborate & Evaluate: incorporate newly acquired skills, both individually and with peers, to critique their own and others' work, to gain a clearer perspective of habits that may detract from the effectiveness of their own writing, and to develop flexible strategies for revising, editing, and proofreading in response to comments from their instructor and peers.

GenEd Outcomes: Creative and Critical Thinking

Critical Thinking/Problem Solving

GenEd Outcomes: Communication

Writing

ENGL 201 - The Research Paper - 5 CR (HSF: Health Science Focus (preferred)

Course Description: Develops skills required for writing research papers. Students learn research techniques, source analysis, thesis development, argumentation styles, and summarizing. Either ENGL 102 or ENGL 201 may be taken for credit, not both. Note: Fulfills a written communication course requirement at BC.

Prerequisite(s): ENGL 101 or equivalent course from another college with a C- or better.

Course Outcomes

- Locate and evaluate different types of evidence for logic, credibility, reliability, and bias (i.e. primary sources, online and written secondary sources)
- Students will locate, evaluate, critically read, summarize, and effectively integrate research sources.

- Compose humanities style research papers that include an evaluation of different types of evidence to support an original thesis and language appropriate for the audience and purpose
- Synthesize their own writing with a breadth of primary and secondary sources with proper in-text citations and a list of citations to avoid plagiarism
- Develop an original and effectively supported thesis that is appropriately complex and significant

GenEd Outcomes: Creative and Critical Thinking

Critical Thinking/Problem Solving

Research/Information Literacy

GenEd Outcomes: Communication

Writing

MATH 130 - Introduction to Statistics - 5 CR

Course Description: Emphasis on gathering and interpreting data. Material has applications in the medical fields, as well as the Social Sciences. Note: Fulfills the quantitative or symbolic reasoning course at BC.

Prerequisite(s): Placement by assessment or MATH 98 with a C or better, or MATH 78 with a C or better.

Course Outcomes

- Appropriately display data, describe data with numerical summaries, and use correct vocabulary to describe patterns and trends.
- Identify and describe sampling methods, types of observations studies, and experiments as well as types of bias.
- Choose and perform the correct calculations for situations involving probabilities from discrete and continuous distributions, confidence intervals, and hypothesis tests.
- Interpret results and clearly state conclusions

GenEd Outcomes: Creative and Critical Thinking

Critical Thinking/Problem Solving

Quantitative/Symbolic Reasoning

MATH 138 - College Algebra for Business & Social Science - 5 CR

Course Description: Examines graphs, non- trigonometric elementary functions, systems of equations and inequalities, and probability, emphasizing uses in business and social science. Either MATH 141 or MATH 138 may be taken for credit, not both. MATH 138 is required before taking MATH 148. Note: Fulfills quantitative or symbolic reasoning course requirement at BC.

Prerequisite(s): Placement by assessment, or MATH 99 with a B- or better.

Course Outcomes

After successful completion of Math 138, the student will be able to:

- Compose, and add, subtract, multiply, and divide functions represented as graphs, tables, and formulas.
- Analyze and apply linear, quadratic, polynomial, rational, exponential, and logarithmic functions.
- Setup, solve, and analyze significant applied problems selected from systems of linear equations, or finance mathematics, or linear programming.
- Apply tools and techniques of introductory probability and statistics selected from the following list: sets, Venn diagrams, tree diagrams, the multiplication principle, permutations, combinations, measures of central tendency, measures of variation, histograms, and boxplots.

GenEd Outcomes: Creative and Critical Thinking

Critical Thinking/Problem Solving

Quantitative/Symbolic Reasoning

MATH& 141 - Precalculus I - 5 CR

Course Description: Emphasizes graphs and polynomial functions. Other topics include the theory of equations and rational, exponential, inverse, and logarithmic functions. Either MATH& 141 or MATH 138 may be taken for credit, not both. Note: Fulfills the quantitative or symbolic reasoning course requirement at BC.

Prerequisite(s): Placement by assessment or MATH 99 with a B- or better.

Course Outcomes:

- Perform operations on algebraic expressions.
- Recognize, evaluate, graph, and transform functions, inverse functions, and circles.
- Perform operations with functions, including composition.

- Find rational and complex zeros of polynomials using the theory of polynomial equations.
- Solve equations, inequalities, and systems of linear equations.
- Solve application problems.

GenEd Outcomes: Creative and Critical Thinking

Critical Thinking/Problem Solving

Quantitative/Symbolic Reasoning

CMST 252 - Communication in a Diverse Healthcare Workplace - 5 CR

Course Description: This course is designed for students pursuing healthcare-related careers. Students will apply communication concepts and theory to the culturally diverse healthcare workplace, focusing on: patient-healthcare professional interactions, interacting effectively on a diverse healthcare team, organizational culture, conflict management, listening, nonverbal communication, language, giving and receiving feedback, and intercultural competence.

Recommended: Placement in ENGL 101, or higher.

Course Outcomes:

- Analyze how their cultural identity influences their perception of patients, healthcare team members, and supervisors and the steps necessary to promote greater empathy for those who are culturally different from themselves.
- Identify the behaviors (including responding non-defensively to criticism, giving constructive criticism, and adapting to norms) that lead to successful communication within a specific organizational culture.
- Discuss behaviors that will promote effective communication on diverse healthcare teams.
- Describe how culture influences conflict and strategies that can be used to effectively collaborate with others.
- Describe the characteristics of intercultural communication competence and the methods of engaging in culturally sensitive language, nonverbal communication, and listening skills.
- Explain the role that culture plays in the social support of patients and their families
- Discuss effective communication approaches with patients with disabilities.
- Describe how race and low socio-economic status impact patients' health and the healthcare experience.

GenEd Outcomes: Communication

Listening and Speaking

GenEd Outcomes: Connections

Cultural Diversity

BIOL& 160 - General Biology w/Lab - 6 CR

Introduces major concepts of cell biology, including cell physiology and structure, molecular biology, genetics, and evolution. Course is a prerequisite for professional health-science programs. Note: Fulfills laboratory science course requirement at BC.

Recommended: Strongly CHEM 121, CHEM 140 or one year of high school chemistry.
Course Outcomes

- Illustrate the organization and complexity of life based on the structure and function of biological molecules and cells.
- Compare and contrast the concept of photosynthesis and cellular respiration and the inter-relatedness of mitochondria and chloroplasts in the energy exchanges important to living organisms.
- Present the historical and modern foundational knowledge underlying Genetics and heredity.
- Explain the transmission of information within a cell involving DNA, RNA and proteins.
- Apply observation and experimentation using the scientific method to understand natural events or phenomena.
- Provide examples that illustrate evolution as the central organizing theme of biology that explains the continuity and diversity of life.
- Investigate current technology in biological research, such as light microscopy and gel electrophoresis.

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GenEd Outcomes: Connections

- Natural Systems (Science and the Natural World)

BIOL& 241 - Human Anatomy and Physiology I - 6 CR

Introduces the structure and function of tissues, organs, and systems of the human body. Both BIOL& 241 and BIOL 242 are needed for a complete study of the anatomy and physiology of all human systems.

Prerequisite(s): BIOL 160 or BIOL 211 with a C or better.

Course Outcomes

- Identify the components of the skeletal, muscular and nervous systems and describe their location in anatomical terms.

- Recognize and describe the relationship between the anatomical structure of an organ and how it correlates to its function.
- Observe and describe differences in tissue types to predict their role in the normal structure and functioning of an organ.
- Explain the principle of homeostasis and the use of feedback loops to control physiological systems, and how an inability to maintain homeostasis can lead to disease.
- Use appropriate terminology to effectively communicate information related to anatomy and physiology.

GenEd Outcomes: Connections

- Natural Systems (Science and the Natural World)

BIOL& 242 - Human Anatomy and Physiology II - 6 CR

Continues the study of tissues, organs, and systems of the human body. Both BIOL 241 and BIOL& 242 are needed for a complete study of the anatomy and physiology of all human systems. Note: Fulfills a laboratory science course requirement at BC.

Prerequisite(s): BIOL 241 at BC with a C or better.

Course Outcomes

- Identify the components of the major organ systems and describe their location in anatomical terms.
- Apply concepts and knowledge of terminology, structure and function related to each organ system.
- Perform basic physiological measurements and analyze the results to determine if they are within a “healthy” range or indicate an abnormality.
- Explain how the body systems function to maintain homeostasis and how imbalances of these systems lead to disease.
- Effectively use anatomical and physiological vocabulary to communicate, written and orally, educate patients and work with colleagues in a professional setting.

GenEd Outcomes: Connections

- Natural Systems (Science and the Natural World)

Prerequisites

AHE 100 - Introduction to Healthcare - 5 CR

An introduction to health care delivery systems, associated career opportunities, and related trends. Looks at the industry as a whole and the integration of services and professions. Students explore career choices including educational requirements, job outlooks, governing agencies, occupational requirements, pay ranges, professional requirements, and employer expectations.

Course Outcomes

- Explain the various types of health care delivery systems, services and providers including private, government, voluntary, and non-profit agencies.
- Differentiate between occupational “clusters” in health care (therapeutic, diagnostic, information services, environmental services, prevention, etc).
- Outline a range of careers in the fields of health care, medicine, and wellness.
- Assess aptitude for a career in health care.
- Identify the requirements and expectations of health care employers.
- Identify trends and changes that may impact health care delivery systems and career choices.
- Explain the basic legal and ethical responsibilities common to all healthcare systems

AHE 110 - Medical Terminology - 5 CR

Provides a comprehensive foundation of basic medical terminology for use in health care careers. Includes Greek and Latin word roots, prefixes, suffixes, combining forms, special endings, plural forms, abbreviations and symbols. Terminology emphasis on body structures, anatomical systems, pathologies, medical procedures, medical specialties, and common terms and abbreviations used in health care. Introduces concepts and application or reading, writing and interpreting common medical formats such as HPI and SOAP.

Course Outcomes

- Utilize word roots, prefixes, suffixes and combining forms to build medical terms.
- Explain medical abbreviations, signs, and symbols accurately.
- Apply reading, writing, spelling and pronunciation of common terms for medical terminology.
- Distinguish common medical terms in relation to anatomy, physiology, pathology, medical procedures, medical treatments, and diagnostic tests.
- Interpret common medical formats of communication.

- Apply properly and accurately constructed written medical formats.

AHE 120 - Safety for Healthcare - 2 CR

Course includes Basic Life Support CPR, Bloodborne Pathogens, Workplace Violence Prevention, Health Insurance Portability and Accountability Act and First Aid Certifications.

Course Outcomes

- Complete Bloodborne Pathogen (BBP) training as required by Washington WAC 296-823-12005.
- Complete basic HIPAA training requirements for health care workers as specified by 65 Fed. Reg. 82464.
- Complete prevention training in healthcare workplace violence as required by WA RC Chapter 49.19
- Complete First Aid Basic training as specified by WAC 296-54-51520 and OSHA guidelines.
- Complete Basic Life Support for the Healthcare Provider (CPR) as specified by WAC 110-148-1375 and as established by OSHA guidelines.

RADTX 230 Radiologic Sciences Patient Care - 2 CR

Course Description: Explores general care of the cancer patient, emphasizing the role of the radiation therapist in healthcare situations.

Course Outcomes:

- Evaluate effective communication with patients of all ages, conditions, and backgrounds; and assess how professional attitudes and communication affect patient care.
- Employ proper infection control and standard precaution procedures.
- Employ the principles of patient safety and transfer through the use of proper body mechanics.
- Critique the role of a radiation therapist within the healthcare team and the importance of multidisciplinary care for cancer patients.
- Identify the various medical emergencies that can occur in the Radiation Therapy Department, and describe the signs, symptoms and therapist actions for each.
- Assess the condition of cancer patients before, during, and after treatment delivery, including nutritional status, to provide education or intervention.

RADTX 260 Legal Issues in Radiologic Sciences – 2CR

Course Description: The content covers sources of law, legal terminology, causes of action and litigation processes pertinent to healthcare scope of practice. Standards of care, healthcare laws, ethical theories,

and professional competence will be emphasized. Current legal and ethical issues in health care and radiation oncology are discussed including the legal ramifications of negligence.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Analyze medical professional code of ethics related to specific ethical theories as they relate to the radiologic sciences.
- Recognize the role of effective communication in preventing and mitigating legal action.
- Recognize the importance of documentation and the maintenance of clinical practice records as legal records.
- Apply ethical principles that guide decision making in the practice of radiation oncology.
- Explain the relationship between patient autonomy and informed consent. Describe situations in which the informed consent process may legally be eliminated.
- Identify the purpose of confidentiality in the health care setting and identify legal exceptions to the disclosure of information.
- Define tort, negligence and malpractice. Identify the ethical obligations of a radiation therapist regarding risk management.
- Identify ethical and legal end of life issues as they apply to radiation oncology.
- Discuss specific justice issues in health care. Explain how distributive justice issues effect the quality of health care delivery in the US.
- Identify ethical issues that occur specifically with non-dominant cultures, ethnicities, and gender identities. Demonstrate ways to work ethically with these groups in the radiation oncology department.
- Identify and analyze legal and ethical issues involving the radiation therapy student, making specific applications to the student's own clinical practice.
- Analyze and apply student's own ethical perspective on specific issues in health care such as confidentiality, risk management, patient rights and dying issues.

GenEd Outcomes: Connections

- Ethics

RADTX 245 Cross-Sectional Anatomy – 3 CR

Course Description: Content is designed to establish a knowledge base in three-dimensional imaging. The foundation for Image Guided Radiation Therapy (IGRT) begins with the ability to locate and identify anatomic structures in multiple dimensions including axial (transverse), sagittal, coronal and oblique planes. This course offers a detailed study of gross anatomical structures conducted systematically for location, relationship to other structures, and function. The characteristic appearance of each anatomical structure as it appears on a CT, MR, PET, and ultrasound image, when applicable, will be stressed. This course also explores the processes by which tumors originate, grow, metastasize, and alter the normal function of body systems.

Course Outcomes:

- Recognize gross anatomical structures located throughout the entire human body and identify in cross-sectional views including the axial (transverse), sagittal, coronal and oblique planes.
- Compare and contrast anatomy illustrations with MR and CT images in the same imaging planes and at the same level, when applicable.
- Correlate anatomical landmarks with internal organs including the lymphatic system.
- Assess how volumetric data sets and 3-D reconstruction of the body structures have become increasingly important to the critical diagnosis and treatment of diseases.
- Distinguish common pathologies recorded on multiplanar images.

RADTX 246 Pathophysiology for Radiation Therapists – 5 CR

Course Description: Content covers physiologic changes that occur in disease and injury, and their application to the radiologic sciences. Etiological considerations and concepts of oncologic pathology are reviewed. The etiology, clinical manifestations, and prognosis of diseases of the blood, heart, blood vessels, excretory system, gastrointestinal system, respiratory system, endocrine system, reproductive system, nervous system, musculoskeletal system, and skin are emphasized.
Prerequisite(s): Acceptance into program.

Course Outcomes

- Compare the normal structure and function of human organs and tissues with alterations of cell growth.
- Analyze imaging procedures used to diagnose diseases.
- Compare and contrast acute and chronic inflammation.
- Determine probable diagnostic rationale for the therapeutic pathway for oncologic diseases and respective prognosis.
- Describe how tumors are classified, staged and graded; and compare and contrast benign and malignant neoplasms.
- Compare the normal structure and function with alterations of cell growth for human organs and tissues
- Anticipate the effects of common diseases on patients, how this may compound side effects associated with radiation treatment.

RADTX 231 Psychosocial Aspects of Cancer Care - 2 CR

Course Description: Explores psychosocial attitudes and behaviors related to the care of patients with cancer. Examines values associated with compassion for others and the importance of professional self-care. Students will articulate their personal beliefs and attitudes towards terminal illness and death through self-assessment and reflective exercises.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Analyze psychosocial factors related to working with cancer patients and their families including reactions to diagnosis, dying and grief.
- Demonstrate effective therapeutic communication techniques with patients and their families through oral and written exercises.
- Apply the principles of professional self-care through journaling.
- Demonstrate through the use of case studies the application of classroom topics to the clinical setting.
- List local community resources available to cancer patients and assess their accessibility and cost to patients.
- Exercise responsible and productive social conscience.

RADTX 247 Imaging and Processing in Radiation Oncology - 3 CR

Course Description: Content is designed to establish a knowledge base in factors that govern and influence the production and recording of radiographic images. Students will examine specific imaging equipment used for patient simulation, treatment planning, and treatment verification in radiation oncology and its application in the clinical setting.

Course Outcomes:

- Compare and contrast the basic principles of image formation for each of the following modalities: MR, CT, ultrasound, and nuclear medicine.
- Examine the various types of historical imaging methods to modern digital receptors including advantages and limitations.
- Prioritize and apply techniques to enhance image details and reduce image distortion, and analyze relationships of factors affecting image contrast, density and resolution to determine optimal image quality for a conventional simulator.
- Determine imaging artifact types, causes and preventive measures.
- Examine the potential impact of digital imaging systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.
- Apply image acquisition precautions necessary for digital imaging to include background and scatter radiation.
- Identify data processing, digital imaging and communications in medicine (DICOM) and picture archiving and communications system (PACS) and their functions.

The Radiation Therapy Program core curriculum is aligned with the American Society of Radiologic Technologists (ASRT) professional curriculum and American Registry of Radiologic Technologists (ARRT) competency requirements. (add this statement to program catalog description)

Radiation therapy BAS Degree Core Curriculum

RADTX 320 Principles of Oncology – 4 CR

Explores causes, classification, diagnosis, detection, spread, and management of cancer.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Define selected statistical terminology and apply statistical analysis to cancer trends and other cancer data.
- Describe the nature of cancer and identify the role genes play in the cause of cancer.
- Describe various systems used to classify cancer and discuss the application of each of system in the management of cancer.
- Compare and contrast the behavioral characteristics of benign and malignant tumors.
- Analyze cancer incidence rates and epidemiological data in terms of such factors as age, gender, ethnicity, geography, prevalence and risk.
- Compare and contrast the methods by which cancer spreads.
- Evaluate the diagnostic tools used in the detection of cancer.
- Discuss the importance of public education and mass screening in the detection of cancer.
- Analyze the goals of curative and palliative management of cancer.
- Describe the principles of surgery, chemotherapy and radiation therapy in cancer management.
- Analyze the role of clinical trials in establishing current treatment methods and possible future cures for cancer.
- Describe the role of radiation therapy in cancer management.

RADTX Principles & Practice of Radiation Therapy I – 2 CR

Explores the machines and treatment delivery accessories used during administration of radiation therapy.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Analyze and accurately apply the special quantities and units for radiation therapy.

- Compare and contrast the use of brachytherapy and external beam for radiation therapy treatments.
- Discuss the advantages and disadvantages of low and high energy radiation therapy treatments.
- Analyze the source design used in the Colbalt-60 treatment machine.
- Discuss the use of the Cobalt-60 treatment machine in the treatment of patients who have cancer.
- Identify the major components of a modern medical linear accelerator.
- Analyze the use of technologies such as independent jaws, multileaf collimators, dynamic wedges and real-time portal imaging associated with modern medical linear accelerators.
- Analyze the appropriate use of beam directional devices, bolus, blocks, wedges, and compensators in megavoltage radiation therapy treatments.
- Compare and contrast the purpose of wedges and compensators in megavoltage radiation therapy treatments.

RADTX 430-432 Principles & Practice of Radiation Therapy II, III & IV – total of 9 CR

Course Description: Examines cancer epidemiology and etiology, detection and diagnosis and tumor classification. Expands student's knowledge of disease management including pathology, metastatic patterns and principles of treatment. Emphasizes regional anatomy and physiology, management of radiation therapy side effects, survival rates, prognosis and follow up care. The student will produce scholarly case studies using professional research methodology and critical analysis.

Course Outcomes

- Critique the role and scope of surgical oncology, medical oncology radiation oncology, immunotherapy, other emerging technologies and multidisciplinary approaches in the management of neoplastic disease.
- Assess epidemiologic and etiologic information and risk factors pertinent to each anatomic site.
- Compare detection and diagnostic mechanisms used to identify and evaluate the clinical presentation of neoplastic diseases associated with each anatomic site.
- Classify neoplastic diseases associated with each anatomic site through application of grading and staging systems.
- Analyze the principles and practice of radiation oncology simulation and treatment as they apply to neoplastic diseases associated with each anatomic site.
- Appraise the parameters of treatment field design and technique used to treat neoplastic diseases associated with each anatomic site including common patterns of spread.
- Establish and evaluate the radiation therapist role and scope of practice in administering radiation therapy in the management of neoplastic diseases associated with each anatomic site.

- Analyze the role and scope of radiation therapy used in palliative disease management to ensure patient quality of life.
- Compare and contrast treatment regimens and fractionalization schemes used in curative and palliative disease management.
- Differentiate the syndromes encountered in emergency scenarios and analyze the role and scope of emergent radiation therapy treatment application.
- Identify patient acute and chronic side effects and/or complications encountered during and after a course of therapy. Create a management strategy that fosters healing and comfort for neoplastic diseases associated with each anatomic site.

RADTX 291 Special Topics in Radiation Therapy 1-5 CR's

Explores issues of special interest to students and radiation therapists. May be used as continuing education for certified Radiation Therapy Therapists.
Prerequisite(s): Acceptance into program.

Course Outcomes

- Special topics course. Outcomes dependent upon selected topic each quarter.

RADTX 340 Radiobiology – 3 CR

Explores types of radiation, interaction of radiation with matter, and the effects of those interactions in human tissue. Students learn methods and principles of radiation protection for both patient and therapist.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Describe atomic structure and identify different nuclear arrangements
- Describe characteristics of radiation, x-ray production and the fundamentals of interactions with matter.
- Identify units of dose and exposure, and apply the correct unit to the appropriate situation.
- Describe radiation effects on molecules, cells, tissues and the body as a whole.
- Analyze factors affecting biological response, including acute and chronic effects of radiation.
- Distinguish between somatic and genetic effects of radiation exposure and differentiate between stochastic and deterministic effects of radiation exposure.
- Apply principles of radiation protection, including the responsibilities of the therapist for patients, personnel and the public.

- Discuss pertinent radiation events to determine fact versus fiction and possible early versus late effects to the population.
- Identify federal and state guidelines governing the proper use of ionizing radiation for medical purposes.

BIOL 312 Biology of Cancer – 5 CR

Emphasis is on the cellular, genetic, biochemical and environmental aspects of the disease including discussion of the multiple disease nature of cancer, its diagnosis and treatment.

Recommended: BIOL 160 or BIOL 211.
Prerequisite(s): Admission into Allied Health program or permission of the Life Sciences Program Chair.

Course Outcomes

- Describe the basic biology and genetics of cells, including the cell cycle and its controls, the structure and function of DNA, and replication.
- Outline an overview of cancer (historical, epidemiological, chronic nature of the disease).
- Identify cellular changes that occur in cancer.
- Discuss occupational, environmental and viral causes of cancer.
- Analyze the general process of angiogenesis and metastasis.
- List the types of, diagnosis, and treatments of cancer.
- Describe the role of nutrition in cancer.
- Describe the societal (social, economic and ethical) impact of the fight against cancer.

HCML 460 - Management & Leadership in Healthcare- 5 CR

Prepares students for leadership roles in healthcare. Topics include relations with diverse and/or remotely located staff, global and virtual employees, communication skills for managers, time management, motivating employees, and conflict resolution. Case studies are used to bring a contextual focus on specific departments and organizations in a global healthcare industry.

Prerequisite(s): Acceptance to the program or permission of instructor.

Course Outcomes

- Evaluate diverse leadership styles including a self-assessment, and how they impact the team, conflict management, and organization performance and morale
- Identify and develop strategies to assess inter-personal and team skills, cultural competency
- Examine the qualities and skills of effective project and department managers in healthcare organizations and a diverse client base

- Present and compare diverse leadership and motivation theories and practices, and analyze their respective effectiveness in the context of healthcare organizations and a diverse client base
- Develop effective, diverse management strategies that promote communication, minimize stress, and increase productivity, and analyze their effectiveness in the context of healthcare organizations and a diverse client base
- Examine and practice decision-making processes and techniques that facilitate effective and efficient change management for a diverse client base
- Develop and plan scenarios to prepare and lead effective training sessions
- Examine organizational leadership in managing continuous change in the context of healthcare organizations and a diverse client base

RADTX 341 Radiation Therapy Quality Assurance, Safety and Protection – 2CR

Course Description: The content of this course presents an overview of the principles of radiation protection and safety, including the duties and responsibilities of the radiation therapist. Safety measures for patients, coworkers and the public are emphasized. Radiation safety requirements of federal and state regulatory agencies and accreditation agencies are studied.

Objectives

- Calculate exposure based on time, distance and type of radioactivity.
- Explain techniques used to reduce unnecessary dose to the patient and employ the concept of as low as reasonably achievable (ALARA).
- Recognize the legal and ethical radiation protection responsibilities of radiation workers and describe the concept of negligible individual risk
- Select the correct units for exposure, absorbed dose, dose equivalence and radioactivity.
- Compare the various dose monitoring methods for medical personnel and list exposure limits for occupational and nonoccupational individuals.
- Distinguish the interrelationship between relative biological effectiveness and quality factors.
- Distinguish between somatic and genetic effects of radiation exposure and differentiate between stochastic and deterministic effects of radiation exposure.
- Discuss the principles of radiation protection used when designing treatment rooms.
- Recall the boundaries and regulations of the state and national regulatory agencies.
- Describe the elements of a radiation protection survey for patients undergoing brachytherapy in the operating room and inpatient settings.
- Explain the theory, operation and limitations of radiation detection devices.
- Develop an action plan for equipment failure.
- Define responsibilities of the radiation safety officer, explain procedures to receive and ship radioactive materials and evaluate a record keeping system for radioactive sources.

RADTX 350 Radiation Therapy Physics I – 3 CR

Course Description: The course content is designed to establish a knowledge base of physics pertinent to developing an understanding of radiation used in the clinical setting. Emphasis on fundamental physical

units, measurements, principles, atomic structure, and types of radiation. Topics include radioactive decay, specific activity, and beam intensity calculations. Presents the fundamentals of X-ray production and its interaction with matter.

Prerequisite(s): Acceptance into program.

Course Outcomes:

- Discuss applications of electrodynamics as they pertain to radiation therapy.
- Interpret the fundamental forces of nature and their application in radiation therapy physics.
- Analyze atomic structure and its application in the production of X-rays.
- Analyze the interactions of photons with matter as they relate to radiography and radiation therapy and the factors that affect beam quality.
- Assess radioactivity and the process of radioactive decay.
- Solve equations and interpret graphs involving natural logarithms.
- Appraise uses of brachytherapy sources for cancer treatment and prioritize the radiation safety procedures when working with brachytherapy sources.

Gen Ed Outcomes: Creative and Critical Thinking

Scientific Inquiry (Nature of Science)

RADTX 450 Radiation Therapy Physics II – 3 CR

Course Description: Explores interactions of ionizing radiation with matter including high-energy particle beams. Examines various measurements of radiation. Presents brachytherapy devices and implants. Emphasis on calibration of radiation therapy treatment machines and quality assurance measures.

Prerequisite(s): Acceptance into the program and Radiation Therapy Physics I

Course Outcomes:

- Distinguish the importance of standardized radiation units and measurement.
- Analyze the factors involved in the calibration of a linear accelerator.
- Describe the interactions of charged particles with matter.
- Analyze the advantages and disadvantages of particle beam therapy.
- Evaluate the purpose of a continued quality improvement (CQI) program for radiation therapy.
- Demonstrate a comprehensive understanding of the principles and procedures of quality assurance (QA) for linear accelerators, CT simulators, and brachytherapy systems in radiation oncology.

RADTX 370 Principles of Dose Calculation – 4 CR

This course is an introduction to the principles and methods for calculation of treatment times when administering radiation therapy treatments.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Analyze the purpose of the radiation therapy prescription.
- Compare and contrast a radiation therapy prescription to a general medical prescription.
- Apply specific geometric figures to radiation therapy applications.
- Apply specific trigonometry functions to radiation therapy applications.
- Identify the factors included in basic monitor unit and minute calculations.
- Apply the inverse square law to a beam of radiation and output of a linear accelerator.
- Analyze beam divergence and magnification associated with a beam of radiation.
- Compare the information included in specific radiation therapy beam data tables.
- Apply mathematical interpolation and extrapolation models to beam data tables.
- Apply the beam data tables for basic monitor unit calculations.
- Evaluate potential sources or errors in calculations for patient treatments.
- Calculate a monitor unit setting within 2% accuracy of a computer calculation.

RADTX 375 Principles of Simulation – 2 CR

Presents basic principles of radiation therapy simulation. Students will apply concepts in clinics in the following quarter. Topics include legal aspects, rationale for simulation and documentation. Equipment components, operation, and imaging techniques are analyzed. Patient measurements, positioning and immobilization devices are studied.

Prerequisite(s): Acceptance into Program.

Course Outcomes

- Discuss patient positioning strategies including straightening and leveling techniques. Determine if patient is a candidate for gating or motion management during treatment delivery.
- Explain contrast methods and risks, various types of fiducial markers, purpose of fluoroscopy for brachytherapy procedures. Compare and contrast traditional fluoroscopic simulation with CT simulation.
- Determine isocenter placement, patient separation and SSD’s using superficial anatomy and landmarks common in radiation therapy.
- Correctly identify critical anatomical structures on X-ray & CT images, discuss factors involved in determination of the CT scan volume.

- Identify the steps and sequence of performing a simulation, localization and therapeutic radiation therapy procedures in accordance with national patient safety standards
- Demonstrate an understanding of effective written, oral and nonverbal communication with patients and other members of the health care team.
- Explain accurate documentation of all aspects of patient care and management in the health record, including marking patient for reproducibility.

RADTX 470 Treatment Planning I – 3 CR

Prerequisite: Acceptance into program.

Course Description: Students will establish a knowledge base in the treatment planning process. Modalities used for treatment are explored with an introduction of treatment volumes, plan evaluation tools and therapeutic ratio. Fractionation and dose distributions associated with treatment techniques including 2D, 3D-Conformal Radiation Therapy, Intensity Modulated Radiation Therapy (IMRT), and Volumetric Modulated Arc Therapy (VMAT) are studied.

Course Outcomes:

- Recognize the effects of patient positioning and immobilization and how these factors influence treatment planning decisions.
- Analyze the factors that affect the dose distribution shown on isodose charts, graphs and data tables.
- Explore the principles and factors that influence design and analyze the objectives of treatment planning.
- Assess and apply International Commission on Radiation Units and Measurements (ICRU) volumes used to plan, administer and record a course of radiation therapy.
- Evaluate and compare the historical use of manual methods to modern automated practices, including production of patient contours, surface and image guided practices.
- Appraise the clinical workflow from patient diagnosis to quality assurance and prioritize the steps in the treatment planning process.

RADTX 471 Treatment Planning II – 5 CR

Prerequisite(s): Acceptance into program and Treatment Planning I

Course Description: Students will examine the factors that govern and influence clinical planning of patient treatment. Optimal treatment planning is emphasized including radiobiologic considerations, dosimetric calculations, and clinical application of treatment beams.

Course Outcomes:

- Calculate and compare monitor unit settings, point doses, and design models for tabulation.
- Interpret radiation therapy treatment techniques and dose calculation methods.
- Evaluate monitor unit and dose distribution models selecting the appropriate model for specific calculation situations.
- Differentiate between conventional and nonconventional fractionation schemes.
- Evaluate dose distributions for beam energies, field sizes and patient contours.
- Appraise the changes in dose distributions created by patient separation changes, oblique incidence, and tissue inhomogeneities.
- Analyze the criteria for selection of treatment fields and design treatment field arrangements for the treatment of specified cancers.

RADTX 472 Treatment Planning III – 5CR

Prerequisite(s): Acceptance into program and Treatment Planning II.

Course Description: In their continued study of treatment planning, students will become proficient in tissue compensation techniques and algorithms. Students will examine Implications of calculation and treatment errors , and study advanced dosimetric calculations for treatment modalities . Treatment planning for particle beams, stereotactic and emerging technologies are presented.

Course Outcomes:

- Detect and critique errors in a dose calculation.
- Interpret the physical limitations and evaluate the appropriate clinical applications for treatment modalities.
- Calculate and compare advanced dose distributions and design models for tabulation.
- Identify clinical situations involving and examine the issues of adjacent treatment fields.
- Analyze scatter distribution and apply specific models for determining the scatter component for high energy photon beams.
- Critique the application and utilization of newer and emerging technologies.

RADTX 311 Clinical Practice I - 5 CR

Course Description: Weeks 1 through 4: Students receive 16 hours per week orientation to the clinical setting using lectures and simulated exercises in a Virtual Environment Radiation Therapy (VERT). Then a competency-based educational sequence begins the 5th week of quarter. The remaining weeks provide 16 hours per week of supervised clinical instruction at an affiliated hospital or health care facility. Concept Integration activities will be assigned as weekly group discussions.

Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will identify common methods of treatment used in radiation oncology and demonstrate their understanding of concepts related to patient positioning and monitoring, equipment operation and monitoring. Students will be able to identify professional organizations and regulatory bodies specific to radiation therapy and demonstrate their understanding of policies and procedures related to radiation safety.
- **Psychomotor Domain:** Students will demonstrate competence performing activities such as preparing the treatment room, interpreting the patient set-up instructions, equipment operation, and using correct body mechanics when transferring or assisting a patient.
- **Interpersonal Domain:** Students will demonstrate ongoing sensitivity to and compassion for each patient's physical and emotional well-being, interact with members of the radiation therapy team and related departments in a positive and productive manner, and maintain high ethical standards.

RADTX 312 Clinical Practice II - 5 CR

Course Description: Provides 16 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Concept Integration activities will be assigned as weekly group discussions.

Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will demonstrate their understanding of concepts related to patient positioning and immobilization, equipment and machine operation, patient and equipment monitoring, program and institutional policies and procedures, and radiation safety.
- **Psychomotor Domain:** Students will demonstrate competence performing activities such as verifying patient positioning and employ the proper use of imaging and treatment equipment.
- **Interpersonal Domain:** Students will demonstrate the ability to assess and evaluate the patient's physical and mental status prior to delivery of radiation. Establish appropriate and effective written, oral and nonverbal communication with the patient and their family, using cultural competence techniques. Establish values and attitudes congruent with the profession's standards and ethics.

RADTX 313 Clinical Practice III - 5 CR

Course Description: Provides 16 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Concept Integration activities will be assigned as weekly group discussions.

Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will demonstrate their ability to identify diagnosis, pathology, and stage of disease for each patient. Students will compare port films with simulation films to determine accuracy of treatment and follow appropriate radiation safety and protection procedures.
- **Psychomotor Domain:** Students will demonstrate competence performing the warm-up procedure of the treatment unit, record machine parameters accurately, and operate within the radiation therapy scope of practice, regardless of personal beliefs.
- **Interpersonal Domain:** Students will demonstrate the ability to assess and evaluate psychological and physical changes in the patient's condition and formulate appropriate actions. Students will interact with the patient and family to provide psychosocial support.

RADTX 314 Clinical Practice IV - 12 CR

Course Description: Provides 40 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Concept Integration activities will be assigned as weekly group discussions.

Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will demonstrate their ability to prioritize tasks, explain rationale for position verification and imaging procedures, differentiate between tumor lethal dose and normal tissue tolerance dose, and document treatment and care in the patient record.
- **Psychomotor Domain:** Students will demonstrate competence performing activities by completing terminal competencies for simulation and treatment delivery procedures, constructing immobilization, beam directional and beam modification devices.
- **Interpersonal Domain:** Students will demonstrate ongoing sensitivity and identify potential side effects in patients and report those that the patient experiences. Observe and report on specific

treatments for side effect management, interact with members of the radiation therapy team in a productive manner and maintain high ethical standards.

RADTX 411 Clinical Practice V - 8 CR

Course Description: Provides 24 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Students will apply principles of self-advocacy by creating personal clinical goals and using critical feedback to improve learning. Concept Integration activities will be assigned as weekly group discussions. Students will participate in Interprofessional Education (IPE) activities assigned by course instructor.
Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will demonstrate their understanding by prioritizing routine tasks such as noting when images need to be taken, identifying changes in field parameters and by adapting to changes in daily schedules. Students will maintain accurate verification and records of daily treatment.
- **Psychomotor Domain:** Students will demonstrate competence by taking the lead with routine operations and for basic procedures.
- **Interpersonal Domain:** Students will communicate any schedule or technical changes in treatment to the team in a positive and productive manner. Students will interact professionally with members of the radiation therapy team and related departments and maintain high ethical standards**, i**ncluding communicating patient related problems to the appropriate personnel, building rapport with patients, and clearly explaining side effect management .

RADTX 412 Clinical Practice VI - 8 CR

Course Description: Provides 24 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Students will apply principles of self-advocacy by creating personal clinical goals and using critical feedback to improve learning. Concept Integration activities will be assigned as weekly group discussions. Students will participate in Interprofessional Education (IPE) activities assigned by course instructor.
Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will recognize discrepancies between set ups, reference images, image guidance and written instructions. They will identify

common, machine faults during the operation of the treatment unit and demonstrate the ability to problem solve these situations in order to complete safe treatment. Students will maintain accurate records of daily treatment, noting changes in procedures or physician and nursing instructions.

- **Psychomotor Domain:** Students will demonstrate competence performing advanced activities such as thorough review of patient chart prior to treatment, explaining procedures to patient, taking the lead with set ups, imaging procedures and treatment delivery. Students will also perform manual and computerized dosimetry calculations and planning.

- **Interpersonal Domain:** Students will demonstrate ongoing compassion for each patient's physical, psychological and emotional well-being. Students will identify treatment side effects or complications and create an interdisciplinary management strategy that fosters prevention, healing and comfort. Students will maintain high ethical and safety standards.

RADTX 413 Clinical Practice VII - 8 CR

Course Description: Provides 24 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Students will apply principles of self-advocacy by creating personal clinical goals and using critical feedback to improve learning. Concept Integration activities will be assigned as weekly group discussions. Students will participate in Interprofessional Education (IPE) activities assigned by course instructor.
Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will identify the principles of quality management and apply quality assurance measures. They will perform chart checks, verify prescriptions, recognize errors in computations and discrepancies in treatment parameters. Students will review patient chart prior to treatment and explain procedures to the patient. STudents will differentiate and prioritize between emergency and non-emergency radiation therapy procedures.
- **Psychomotor Domain:** Students will demonstrate competence performing manual and computerized dosimetry calculations, design and evaluate treatment plans as assigned. They will take the lead with set up, imaging, treatment delivery and other advanced operations. Students will problem-solve discrepancies and detect equipment malfunctions and select appropriate action.
- **Interpersonal Domain:** Students will evaluate and assess daily the physiologic and psychological responsiveness of each patient undergoing treatment. Students will implement strategies that assure professional development at a level of clinical practice consistent with acceptable standards. They will maintain composure and take decisive action under stress and when clinical problems occur, and participate in collaborative departmental activities such as morning huddle, chart rounds and tumor boards.

RADTX 414 Clinical Practice VIII - 12 CR

Course Description: Provides 40 hours per week of supervised clinical instruction, progressing through a competency-based educational sequence. Students will apply principles of self-advocacy by creating personal clinical goals and using critical feedback to improve learning. Concept Integration activities will be assigned as weekly group discussions. Students will participate in Interprofessional Education (IPE) activities assigned by course instructor.
Prerequisite(s): Acceptance into program.

Course Outcomes and Scope of Competence:

- **Cognitive Domain:** As part of providing treatment, students will demonstrate their understanding by evaluating custom treatment plans, appraising treatment techniques and procedures associated with various neoplastic diseases. They will assess critical aspects of treatment set up, imaging and delivery. Students will demonstrate clinical competence by completing all program requirements, including clinical hours, competencies, and senior rotations.
- **Psychomotor Domain:** Students will demonstrate competence performing activities such as patient positioning, imaging procedures, equipment operation and treatment delivery, detecting equipment malfunctions and selecting appropriate action. Students will employ safe decision-making skillsand take appropriate action when clinical problems occur.
- **Interpersonal Domain:** Students will demonstrate ongoing sensitivity and compassion for each patient and interact with members of the radiation therapy team and related departments in a positive and productive manner. They will provide radiation therapy services by contributing as an essential member of the radiation oncology treatment team through provision of total quality care of each patient undergoing a prescribed course of treatment. Students will implement strategies that assure professional development at a level of clinical practice consistent with high ethical standards. Students will maintain composure and take decisive action under stress and when clinical problems occur, and participate in collaborative departmental activities such as morning huddle, chart rounds and tumor boards.

RADTX 489 Concept Integration – 1 CR

Provides review of all categories for the American Registry of Radiologic Technologists (ARRT) exam for Radiation Therapy board certification. Students work in teams to develop a simulated exam based on ARRT content specifications.

Prerequisite(s): Acceptance into program.

Course Outcomes

- Describe the American Registry of Radiologic Technologists (ARRT) Content Specification in Radiation Therapy.
- Describe the models for question development.

- Develop a review process, based on the Content Specification, in preparation for the American Registry of Radiologic Technologists Examination in Radiation Therapy.
- Develop mock examination questions following the ARRT Content Specification in Radiation Therapy.
- Develop and follow a process for verifying answers to the mock examination questions.
- Complete the application process to sit for the American Registry of Radiologic Technologists Examination in Radiation Therapy.

RADTX 299 Individual Study in Radiation Therapy Technique 1-5 CR

Covers a variety of topics to acquaint the radiation therapist with the role of radiation oncology in cancer management. May be repeated for a maximum of 15 credits.
Prerequisite(s): Acceptance into program.

Course Outcomes

- Individual study course. Outcomes dependent upon topic selected between student and professor.

RADTX 399 Individual Study in Radiation Therapy Technique 1-5 CR

Covers a variety of topics to acquaint the radiation therapist with the role of radiation oncology in cancer management. May be repeated for a maximum of 15 credits.
Prerequisite(s): Acceptance into program.

Course Outcomes

- Individual study course. Outcomes dependent upon topic selected between student and professor.

Appendix B- Peer Reviews

College Name:	Bellevue College	**BAS Degree Title:**	Bachelor Applied Science Radiation Therapy
Reviewer Name/ Team Name:	Megan Trad, Ph.D., RT(T)	**Institutional or Professional Affiliation:**	Texas State University
Professional License or Qualification, if any:	Professor/Chair Texas State Radiation Therapy program RT(T) Associate Dean Texas State College of Health Professions.	**Relationship to Program, if any:**	None
Please evaluate the following Specific Elements			
a) Concept and overview	Is the overall concept of the degree program relevant and appropriate to current employer demands as well as to accepted academic standards? Will the program lead to job placement?		
	Comment The field of radiation therapy is constantly evolving and the need for therapists to be skillfully trained and have a good foundation of critical thinking skills has never been more urgent. Post pandemic, there has been a nationwide shortage of all healthcare providers, including radiation therapist while technology and advancements are constantly being implemented. New radiation therapy graduates must master many skills in order to meet the demand of the current state of the field. These include having a firm foundation of the history of radiation therapy, becoming competent in a variety of clinical skills, developing critical thinking skills, as well as developing as a compassionate and empathetic healthcare provider. Because of the enormity and breadth of the topics and characteristics that must develop, there is push from the radiologic science community to make the bachelor's degree the minimum degree to be eligible to take the credentialing exam. Implementing this change prior to that being enforced will set Bellevue College up for longevity and ensure that your program is the program of choice for the Pacific Northwest.		
b) Degree Learning Outcomes	Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?		
	Comment		

	The four goals identified are excellent and will satisfy accreditation standards. I believe the student learning outcomes are appropriate and match with the goals they are associated with. The only one I would worry about is the SLO 3# under goal 4. That might be one that is hard to find data for as it may take students years to continue with their education and so it may be hard to meet a benchmark. But that is just my thought.
c) Curriculum Alignment	Does the curriculum align with the program's Statement of Needs Document?
	Comment Yes, the curriculum seems to be set up in a progressive and logical order so that students can continue to advance in their knowledge throughout the curriculum and be successful in the program.
d) Academic Relevance and Rigor	Do the core and elective courses align with employer needs and demands? Are the upper level courses, in particular, relevant to industry? Do the upper level courses demonstrate standard academic rigor for baccalaureate degrees?
	Comment The curriculum seems to encompass all the topics that will be covered on the licensing exam. I like how physics, dosimetry and treatment planning seem to be touched upon in all quarters and am intrigued by the dose calculation course.
e) General Education Requirements	Are the general educations requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements?
	Comment The only thing I see as possibly lacking is a research course. Typically, BS degrees have a research or capstone course where students develop some sort of research paper bringing all their knowledge together. Maybe that is just a requirement for the state I am in, I am not sure, but incorporating research is a good way to demonstrate critical thinking. I see there is research methodology integrated into the RADTX 430-432 so maybe during that time you are planning on them producing research, and if so then that would be good.
f) Preparation for Graduate Program Acceptance	Do the degree concept, learning outcomes and curriculum prepare graduates to enter and undertake suitable graduate degree programs?
	Comment Yes, many students might want to pursue dosimetry and many of the newer programs are being set up as master's degrees, so this would make them eligible. Other students might want to continue for an MBA, MHA, MPH, or MSRS, and I believe this curriculum would satisfy most of those prerequisites with possibly just a few courses lacking.
g) Faculty	Do program faculty qualifications appear adequate to teach and continuously improve the curriculum?
	Comment In order to teach in a bachelor's degree program, faculty must have at minimum one degree higher. So, this would put a master's degree as the minimum requirement for faculty. It appears several adjuncts are at the BA

	level. Within my own program, I have been able to prove justification for someone with a BS degree to teach if they had special credentials that could show that they meet the standard. I did this specifically for someone with a CMD certification. So that may be a possibility, but otherwise it looks like several of the adjunct faculty do not hold the required degree.
h) Resources	Does the college demonstrate adequate resources to sustain and advance the program, including those necessary to support student and library services as well as facilities?
	Comment NA
i) Membership and Advisory Committee	Has the program received approval from an Advisory Committee? Has the program responded appropriately to it Advisory Committee's recommendations?
	Comment It appears that the advisory committee is very supportive of this transition and has been for a while. There are many letters of support from clinical affiliates, oncologists, and alumni that have expressed the need and desire to make this change.
j) Overall assessment and recommendations	Please summarize your overall assessment of the program.
	Comment I feel like this program is well organized and covers in depth all the topics needed for students to become successful entry level radiation therapists. I believe moving to the BS degree is a great move and is supported and encouraged from many within your community. This move will help your alumni more easily acquire advanced degrees and make them more marketable for management and leadership positions. I would review the requirements of faculty to teach in a BS degree as I think many of the adjuncts do not meet that qualification, or perhaps they are working on their master's at this time. Also think about incorporating a research project for them to display their writing and research skills. I am excited for your future students!

Reviewer Bio or Resume

Megan Trad, Ph.D., MSRS, RT(T), FASRT is chair of and a tenured Professor for the Radiation Therapy Program at Texas State University. She is also currently the interim Associate Dean of the College of Health Professions at Texas State University. Dr. Trad received her Master of Science in Radiologic Science degree from Midwestern State University where she majored in radiologic science education. She received her Ph.D. in Adult, Community, and Professional Education from Texas State University in 2012. Her doctoral work focused on the use of engaged scholarship as a teaching methodology to better equip radiation therapists to enter the professional workforce. Since then, she has published extensively on the topic of engaged scholarship and other innovative teaching methodologies, as well as identifying deficits in learning among university aged students on the topics of cancer prevention, detection, and screening. She is also co-editor of Washington and Leaver's

Principles and Practice of Radiation Therapy, the only radiation therapy specific textbook. Dr. Trad is credentialed by the American Registry of Radiologic Technologists and licensed by the Texas Department of State Health Services.

College Name:	Bellevue College	**BAS Degree Title:**	Bachelor Applied Science Radiation Therapy
Reviewer Name/ Team Name:	Tracy White	**Institutional or Professional Affiliation:**	Arkansas State University
Professional License or Qualification, if any:	Program Director of Radiation Therapy MS, RT (R)(T)(ARRT)	**Relationship to Program, if any:**	None
Please evaluate the following Specific Elements			
a) Concept and overview	Is the overall concept of the degree program relevant and appropriate to current employer demands as well as to accepted academic standards? Will the program lead to job placement? **YES**		
	Comment **Employment demands are currently high in radiation therapy. Employers are expecting high quality critical thinkers in our ever changing technology driven field. A bachelor's degree program will enhance those critical thinking skills and meet those demands of our workforce, which will in turn lead to greater job placement and retention.** **In European countries, bachelor degree program are entry level. The United States will soon have to move to the bachelor degree as entry level as well, based on projections for the next 5-10 years.**		
b) Degree Learning Outcomes	Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor? **YES**		
	Comment **A few of the things that differentiates an AAS program vs. a BAS program are: understanding and participation in research, more advanced critical thinking skills, and leadership experience. These are just a few of the primary differences and this proposal addressed all of those criteria.**		
c) Curriculum Alignment	Does the curriculum align with the program's Statement of Needs Document? **YES**		
	Comment **The curriculum flows well and follows the statement of needs document.**		

d) Academic Relevance and Rigor	Do the core and elective courses align with employer needs and demands? Are the upper level courses, in particular, relevant to industry? Do the upper level courses demonstrate standard academic rigor for baccalaureate degrees? **YES**
	Comment **This proposal is rigorous and appropriate for a bachelor level degree. Great diversity of knowledge and skills for radiation therapy. Progression is good.**
e) General Education Requirements	Are the general educations requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements? **YES**
	Comment **The general education course are comparable to most other colleges with bachelor degree programs.**
f) Preparation for Graduate Program Acceptance	Do the degree concept, learning outcomes and curriculum prepare graduates to enter and undertake suitable graduate degree programs? **YES**
	Comment **Transitioning to a bachelor degree program with research infused curriculum will prepare students who wish to pursue graduate degrees.**
g) Faculty	Do program faculty qualifications appear adequate to teach and continuously improve the curriculum? **YES**
	Comment **Faculty are qualified to teach the proposed change to a bachelor degree. The current program director has advanced certification in medical dosimetry which more than qualifies her for teaching this curriculum. This is a big advantage for this program.**
h) Resources	Does the college demonstrate adequate resources to sustain and advance the program, including those necessary to support student and library services as well as facilities? **YES**

	Comment **The college appears to have an appropriate student services plan and available resources.**
i) Membership and Advisory Committee	Has the program received approval from an Advisory Committee? Has the program responded appropriately to it Advisory Committee's recommendations? **YES**
	Comment **The advisory committee, as well as many community members (including physicians, radiation therapists, and alumni) have all written letters of support for the proposed BAS program.**
j) Overall assessment and recommendations	Please summarize your overall assessment of the program.
	Comment **Careful consideration has gone into this proposed transition from the AAS to BAS including strategic enrollment goals, workforce needs, community demand and sustainability of degree. Our field is moving at a very high speed of technological advances and the education needed now and in the future is at the baccalaureate degree level. Higher level thinking, research, leadership, technology, etc…are all essential for moving our career forward and ensuring proper patient care and safety.**
Reviewer Bio or Resume Evaluator, please insert a short bio here See Resume	

Tracy B. White, M.S., R.T. (R)(T) (ARRT)

Profile

I have been the A-State Radiation Therapy Program Director for 24 years and a member of the Medical Imaging and Radiation Sciences faculty for 27 years. I developed the radiation therapy program and have the ultimate responsibility for curriculum development, clinical and didactic education, admissions, recruitment, programmatic assessment for accreditation and ensuring students are knowledgeable in all aspects of radiation therapy. I also teach courses in our radiography program and assist in their programmatic assessment.

Education

M.S. Vocational / Technical Education and Administration, Arkansas State University, August 2000

Certificate of Radiation Therapy Technology, Central Arkansas Radiation Therapy Institute, August 1989

B.S. Radiologic Technology, University of Central Arkansas and St. Vincent Infirmary Medical Center, August 1988

Professional Experience

Program Director, Radiation Therapy Program, Arkansas State University, 1999 – Present

- Responsible for all curriculum development, clinical and didactic education, admissions, recruitment, programmatic assessment for accreditation as well as advising.

Associate Professor of Medical Imaging and Radiation Sciences, Arkansas State University, 1995-Present

- Responsible for teaching most all didactic courses in radiation therapy as well as courses for the radiography program.

Simulation / Radiation Therapist, St. Bernard's Medical Center, Jonesboro, AR, 1989 – 1995

- Responsible for the simulations and treatment delivery for patients.

Written Publications

Hirsch, Brandon; White, Tracy, **American Society of Radiologic Technologists "Breast Cancer Screening" Directed Reading.** Publication date: Spring 2023

Hirsch, Brandon; White, Tracy, **American Society of Radiologic Technologists "Breast Cancer Treatment" Directed Reading.** Publication date: Spring 2023

DuBose, Cheryl; White, Tracy, **American Society of Radiologic Technologists "MRIGRT Modules"**, 2021

Caldwell, Donna; DuBose, Cheryl; White, Tracy; **Radiologic Technologists** March/April 2009, "Chiari Malformations".

Reviewer for **Principles and Practice of Radiation Therapy**, Washington and Lever, Third Edition 2007

White, Tracy; Hall-Rollins, Jeannean; Caldwell, Donna**; Radiation Therapists** Spring 2005, "Multiple Myeloma".

Adler, Carlton**, Introduction to Radiography and Patient Care**, Third Edition, December 2005.

White, Tracy; Hall-Rollins, Jeannean**; Radiation Therapist** Fall 2002, Using Portfolios in Clinical Assessment.

Heath, Christina; Hall-Rollins, Jeannean; White, Tracy; **Laboratory Manual for Radiologic Procedures Volumes I, II, and III;** 2002

Adler, Carlton, **Introduction to Radiography and Patient Care**, Second Edition. December 2002

Presentations

Associate of Collegiate Educators in Radiologic Technology, Feb. 2023

- Understanding Trauma Informed Care

Arkansas Society of Radiologic Technologists, April 2022

- Understanding Trauma Informed Care

Association of Collegiate Educators in Radiologic Technology, Feb. 2022

- Professionalism and Getting the Job

American Society of Radiologic Technologists, Oct. 2021

- Automation vs. Critical Thinking

Arkansas Society of Radiologic Technologists, October 2019

- Proton Vs. Photon Radiation Therapy

Arkansas Society of Radiologic Technologists, October 2019

- Arsenic, Mustard Gas, and Tanning Beds: What do these have in common?

Seminar of the Seas, October 2018

- Nutrition and Cancer

Arkansas State University Clinical Instructor Seminar, March 2018

- Cultural Competency 101

Association of Collegiate Educators in Radiologic Technology, February 2018

- Virtual Reality Learning Poster Presentation

Association of Collegiate Educators in Radiologic Technology, February 2017

- Teaching in the 21st Century Classroom

Association of Collegiate Educators in Radiologic Technology, February 2016

- Graduation….Now What?

Arkansas Society of Radiologic Technologists, April 2015

- Triple Negative Breast Cancer

Association of Collegiate Educators in Radiologic Technology, February 2014

- Radiation as a Cause of Malignant Neoplasms

Association of Collegiate Educators in Radiologic Technology, February 2013

- Personality Types

Arkansas Society of Radiologic Technologists, April 2011

- Personality Types

Arkansas Society of Radiologic Technologists, April 2010

- Arsenic, Mustard Gas, and Tanning Beds: What do these have in common?

Arkansas Society of Radiologic Technologists, April 2009

- Oncologic Imaging II

Arkansas Society of Radiologic Technologists, April 2007 - Keynote Speaker, Rhinehart Memorial Lecturer

- Generations: Can We Build a Bridge

Arkansas Society of Radiologic Technologists, April 2006

- Oncologic Imaging

Arkansas Society of Radiologic Technologists, April 2004

- From Bones to Blossoms: The Beauty of X-rays, Poster Presentation

American Society of Radiologic Technologists Annual Radiation Therapy Conference, October 2002

- Oncologic Imaging

St. Jude Children's Research Hospital, August 2001

- Oncologic Imaging

Arkansas Society of Radiologic Technologists, April 2001

- Melanoma: The Most Serious Skin Cancer

Committees / Appointments

University

- 2001-2005 - Middle East Studies Committee

College

- 2022 – Present – Nursing PRT Committee
- 2019 – Present - MIRS Faculty Search Committee
- 2018 – 2021 – Infection Control
- 2017 – Present - Interprofessional Practice Committee
- 2016 – Present - Grievance Committee
- 2015 – 2022 – Dept. PRT Committee
- 2014- Present – ASTATE Head and Neck Clinic
- 2013-2016- Faculty Evaluation Committee
- 2013 – Howl for Health
- 2012- 2016 – Faculty Evaluation Committee, Chairperson
- 2011-2014 – College Grievance Committee, Chairperson
- 2010 – CLS Faculty Search Committee
- 2005- 2011 – Infection control
- 2002-2005 Student And Alumni Affairs, Chairperson
- 2000-2005 Student and Alumni Affairs

Department

- 2000 – Present – Student Association of Radiologic and Imaging Sciences – Therapy
- 2000 – Present – Radiation Therapy Admissions
- 2017-2019 – Department PRT Committee

Professional

- 2019- 2021 – Appointed to American Registry of Radiologic Technologist – Practice Analysis Committee
- 2018- 2022 – Arkansas Society of Radiologic Technologist- Board of Directors
- 2017-2019- Association of Collegiate Educators in Radiologic Technology – Board of Directors (Vice President)
- 2010-2012- American Society of Radiologic Technologists Survey Committee
- 2007- 2009 – American Society of Radiologic Technologists RTT curriculum revisions committee
- 2002-2006 – Editorial Review Board for ASRT National Journal "Radiation Therapists"
- 2003 -American Cancer Society; Relay for Life Team Recruitment
- 2002 - American Cancer Society; Annual Gala subcommittee chairperson
- 2002 - Policy and Procedure Chairperson; Arkansas Society of Radiologic Technologists
- 2001-2009 - American Society of Radiologic Technologists Scholarship Review Committee
- 2001 - Policy and Procedures Chairperson; Arkansas Society of Radiologic Technologists

Memberships

American Society of Radiologic Technologist – 1995- Current

Arkansas Society of Radiologic Technologist – 1995- Current

- Secretary, Vice-President, President-Elect, President, Chairman of the Board

Lambda Nu – Radiologic Sciences National Honor Society- 2005 – Current

Association of Collegiate Educators in Radiologic Sciences – 2015- Current

- Vice-President 2017-2019

Certification and Licenses

The American Registry of Radiologic Technologists – Certified in Radiography and Radiation Therapy

State of Arkansas Department of Health - Licensed in Radiography and Radiation Therapy