NSDA Reference
To be added by NSDA

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Healthcare Sector Skill Council

C/o Confederation of Indian Industry, 23, Institutional Area Lodi Road New Delhi – 110 003

Name and contact details of individual dealing with the submission

Name: Mr. Ashish Jain

Position in the organisation: CEO

Address if different from above

Office No. 711, 7th Floor
DLF Tower A, Jasola
New Delhi - 110025, India
Tel number(s) 011-40505850, 011 41017346

E-mail address: ashish.jain@healthcare-ssc.in

List of documents submitted in support of the Qualifications File (attached in following order)

1. Qualification Pack- Annexure1
2. Occupational Mapping Report-Annexure 2
3. Functional Analysis Report-Annexure 3
4. RFP for development of occupational standards-Annexure 4
5. Validation group and industry consultations- Annexure 5
6. The Brief Report on the whole process of the development, validation and notification of these qualification packs along with list of companies and Industry associations involved -Annexure 6
7. Human Resource & Skills Requirement in Healthcare Sector accessible on below given link: http://healthcare-ssc.in/images/Human%20Resource%20&%20Skills%20Requirement%20in%20Healthcare%20sector.pdf
8. Quality Assurance Strategy of Assessment in HSSC-Annexure 7
9. Assessment criteria/framework-Annexure 8

QUALIFICATION FILE SUMMARY

Qualification Title	Radiation Therapy Technologist (HSS/Q 0601)
Body/bodies which will assess candidates	Healthcare Sector Skill Council Accredited Assessing Bodies
Body/bodies which will award the certificate for the qualification.	Healthcare Sector Skill Council
Body which will accredit providers to offer the qualification.	Healthcare Sector Skill Council
Occupation(s) to which the qualification gives access	**Radiation Therapy Technologist (RTT)** in the Healthcare Industry is also known as Radiation Therapy Technician / Radiotherapist / Therapeutic Radiographer / Radiation Therapist. Brief Job Description: RTT's are allied health care professionals who use beams of radiated lights to locate and treat cancerous tumors according to a plan prescribed and within the guidelines set by supervisory radiologist & oncologist. They are also responsible for safety of the patient, for observing and documenting any reactions to treatment and answering any radiology related questions asked by patient and maintenance of equipment following all safety regulations regarding radiation exposure. He/She shall comply with the Atomic Energy Regulatory Board eligibility and safety regulatory requirements.
Proposed level of the qualification in the NSQF.	Level 4
Anticipated volume of training/learning required to complete the qualification.	2000 hrs.
Entry requirements / recommendations.	10+2 with science stream or Level 4 Radiology Technician with experience of minimum 2 years
Progression from the qualification.	Progression will be possible in both academic as well as professional area as: Level 5- Team Leader/ Supervisor or Level 5: Specialization in advanced radiation procedures through bridge course
Planned arrangements for RPL.	HSSC has developed RPL policy to conduct pre assessment of students for gap analysis as per NOS, sharing the gap & final assessments of students and certification. It is explained in section 1 under Assessment, Point 2
International comparability where known	While writing the NOSs the UK, Australia, New Zealand NOSs were also referred to and an effort was taken to maintain comparability in the technical part of the NOSs.

Title of unit or other component (include any identification code used)	**Mandatory/ Optional**	**Estimated size (learning hours)**	**Level**
HSS/N 0601: Work effectively in radiation therapy practice	**Mandatory**	**Class Room and Skill Lab Training = 1500 hours**	**4**

HSS/N 0602: Implement safe radiation practice to protect and enhance patient safety	**Mandatory**	**Clinical/Laboratory Training (OJT) = 500 hours**	**4**
HSS/N 0603: Plan and prepare patient for radiation therapy treatment according to a plan prescribed by radiologist & oncologist	**Mandatory**		**4**
HSS/N 0604: Deliver radiation therapy treatment according to a plan prescribed by radiologist & oncologist.	**Mandatory**		**4**
HSS/N 0605: Engage in evidence-based practice and professional learning	**Mandatory**		**4**
HSS/N 0606: Communicate and collaborate effectively	**Mandatory**		**4**
HSS/ N 9614: Recognize healthy body systems	**Mandatory**		**4**
HSS/ N 9603: Act within the limits of your competence and authority	**Mandatory**		**4**
HSS/ N 9606: Maintain a safe, healthy and secure environment	**Mandatory**		**4**
HSS/ N 9608: Follow radiation safety guidelines	**Mandatory**		**4**
HSS/ N 9609: Follow biomedical waste disposal protocols	**Mandatory**		**4**
HSS/ N 9610: Follow infection control policies and procedures	**Mandatory**		**4**
HSS/ N 9611: Monitor and assure quality	**Mandatory**		**4**
HSS/ N 9602: Ensure availability of medical and diagnostic supplies	**mandatory**		**4**

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack.
Give details of the document here:
Qualification pack is attached as Annexure 1

SECTION 1

ASSESSMENT

Name of assessment body:
If there will be more than one assessment body for this qualification, give details.

Manipal City & Guilds
IRIS corporate solutions pvt ltd
Aspiring Mind
CII

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

HSSC conducts QP-NOS based direct three-way assessment for each and every candidate applied for recognition of prior learning (vis. Certifying the un-certified but skilled workforce who acquired skills through experience of years). Here, the candidates may undergo short-term training of gaps identified. The assessment is conducted via HSSC certified assessor. The assessment pattern is as follows:
REGISTRATION
The candidates need to submit registration form online along with uploading of scanned copies of some mandatory documents. Based on screening of the form, the candidates would be registered on conforming following eligibility criteria.

PRE-ASSESSMENT: The purpose of Pre-assessment is to shortlist candidates as per prescribed limit, and also to notify gaps NOS wise to each candidate for their own self-training or opting for short-term training module before final assessment. The pre-assessment also informs about the reliability of information provided by candidates that they have experience working in the given job role. The pre-assessment is Online, Objective type, NOS based, with Each NOS compulsory each carrying 100 marks, No negative marking for incorrect answers, Test venue is kept as may be home/cyber café/institution/HSSC assessment center if the system have google chrome (Version 41.0.2272.101) and a web camera. Timed test link which expires after 90 minutes from the time of starting / writing the test is used for the same. Result is presented with no. of questions allotted and answered correctly for each NOS along with marks scored for each NOS out of 100.

PORTFOLIO SCREENING

Each registered candidate has to prepare and submit the portfolio as per formats given by HSSC. The portfolio may be verified by HSSC/nominated assessor during pre-assessment and scoring card is given for each portfolio.

FINAL ASSESSMENT: The candidates conforming to RPL guidelines based on both pre-assessment and portfolio screening are finally selected for final assessment. Final assessment is conducted through HSSC accredited Assessing body as per HSSC defined assessment criteria and NOS used for assessment of fresh entrants as described above. Final Assessment is conducted at the training site or at working place in case number of enrolled candidate from the site is more than 15. If needed, Assessment centers is arranged for assessment of candidates in cluster

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

QA regarding accreditation of Assessing Body:

The HSSC Accreditation process is divided into two steps:

1) Pre-accreditation process:
    - Apply for Accreditation: Application form with desired documents in prescribed format to be sent.
    - Document Compliance Check: to be done for ensuring the compliance and adherence of applied assessing body according to criteria laid down by HSSC.
    - Presentation on Quality Assurance: to be given by Assessing body highlighting the quality assurance process laid down by AB at the process points
    - Once the assessing body clears the due diligence process, the accreditation is given along with terms and conditions.
2) Post-accreditation process: Post accreditation, the accredited assessing bodies needs to fulfill

following minimum eligibility criteria or requisites for implementation:

- All Empanelled Assessors would have to undergo **"Train the Assessor"** Program conducted by HSSC for each job role time to time.
- Accredited Assessing Body would have to abide with requisite time-lines, policies and regulations declared by HSSC.
- Accredited Assessing Body with times would have to contribute in expansion of the questionnaire.

QA Regarding Assessment Criteria & papers:

The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria. Accordingly, assessment criteria for each job role is set and made available in qualification pack.

The assessment papers for both theory and practical are developed by Subject Matter Experts (SME) hired by Healthcare Sector Skill Council or with the HSSC accredited Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessments papers are also checked for the various outcome based parameters such as quality, time taken, precision, tools & equipment requirement etc.

The assessment sets as well as assessment criteria are then reviewed by panel of experts from Industry as well as HSSC official for consistency and suitability. The assessments are designed so as to assess maximum parts during the practical hands on work. The technical limitations at the training centres are taken care in theory and viva.

All HSSC accredited Assessment Agency follow the "HSSC process of Assessment Framework" and HSSC approved assessment papers. The assessment by assessment agency will be completely based on the assessment criteria as mentioned in the Qualification Pack developed by HSSC.

Each NOS in the Qualification Pack (QP) will be assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Performance Criteria in the NOS will be assigned marks for or practical based on relative importance, criticality of function and training infrastructure.

The following tools are proposed to be used for final assessment:

1 Practical Assessment: This will comprise of a creation of mock environment in the skill lab which is equipped with all equipment's required for the qualification pack.
Candidate's soft skills, communication, aptitude, safety consciousness, quality consciousness etc. will be ascertained by observation and will be marked in observation checklist. The end product will be measured against the specified dimensions and standards to gauge the level of his skill achievements.
2 Viva/Structured Interview: This tool will be used to assess the conceptual understanding and the behavioural aspects as regards the job role and the specific task at hand. It will also include questions on safety, quality, environment and equipment's etc.
3 Written Test: Under this test few key items which cannot be assessed practically will be assessed. The written assessment will comprise of
i. True / False Statements
ii Multiple Choice Questions
iii Matching Type Questions.
iv) Fill in the blanks

QA Regarding Assessors:

Assessors are selected as per the "eligibility criteria" laid down by HSSC for assessors for each job role. The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to HSSC Assessment Framework, competency based assessments, assessors guide etc. HSSC conducts "Training of Assessors" program time to time for each job role and sensitize assessors regarding assessment process and strategy which is outlined on following mandatory parameters:

1) Guidance regarding NSQF
2) Qualification Pack Structure
3) Guidance for the assessor to conduct theory, practical and viva assessments
4) Guidance for trainees to be given by assessor before the start of the assessments.
5) Guidance on assessments process, practical brief with steps of operations practical observation

checklist and mark sheet

6) Viva guidance for uniformity and consistency across the batch.
7) MOCK assessments
8) Sample question paper and practical demonstration

HSSC also conduct telephonic orientation of the assessors before each assessment for the given job role to assure quality, fairness and timely conduct of assessment.

The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.

QA before, during and after Assessments:

HSSC ensures pre-requisites of Assessment needed by training institute regarding ARTICLES like Mannequins, Mock Ward Infrastructure, Transferring Equipment, Job role related equipment; INFRASTRUCTURE like Class rooms, Skill Lab, Aids like board/marker/logistics, Furniture like display tables, chairs; STAFF like Co-ordinator from training institute, Peon, Some additional members(for simulated situations, if required); DOCUMENTS like Admit Card, Govt. validated ID proof, Record Books like attendance, log book, internal evaluation sheets, Student Enrollment details; for CO-ORDINATION one full time co-ordination point for co-ordination with assessment coordinator before, during and after assessment.

HSSC ensures the three Phases of Assessment to be assured by assessing body and assessor for fair, consistent and quality assessment. The three phases of assessment is enlisted below:

PREPARATORY PHASE: **Documents ensured to be packed, sent and received:** Seal Pack of Sets of Papers, Invigilation Sheet/Covering letter, OMR/Answer sheet; Well **Co-ordination needs to be assured between** Assessment Co-ordinator of assessing body, HSSC official, Co-ordinator from skill center and assessor.

PHASE OF CONDUCT:

1) **Written Examination:**

- Assessor should reach the VTP 30 minutes before the assessment and ensure that all the arrangements are as per the HSSC rules and regulation
- He should make seating arrangement to students leaving minimum 3 feet space between candidates.
- He should make the students sit in the order of seating arrangements.
- The enrolment numbers are to be written on the desks before the arrival of students.
- The details to be filled like assessor name , date and Qualification name should be written on the board
- Learners should keep all their belongings outside the classroom. All mobiles should be switched off and kept on the desk in front of the invigilator
- The seal of the assessment materials is opened in front of the students.
- OMR sheets to be distributed to all learners
- Assessors should instruct the learners on the rules and regulation of the assessment
  - No. of questions
  - Duration of paper
  - Disciplinary rules
  - Administrative rules

2) **Attendance:**

- The assessor/assessment co-ordinator needs to get signature of all candidates while theory as well as practical examination on invigilation sheet. The sheets are signed and stamped by the In-charge /Head of the Training Centre.
- The assessor/assessment co-ordinator needs to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.

- The assessor/assessment co-ordinator needs to punch the trainee's roll number on all the test pieces.
- The assessor/assessment co-ordinator needs to take a photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.
- The assessor/assessment co-ordinator needs to carry a camera to click photograph of the trainees working on the job and giving theory exam as evidence.
- The assessor/assessment co-ordinator also needs to carry a photo ID card.
- The assessor/assessment co-ordinator also needs to take the photographs as evidence from appropriate angels/sides of the final work piece/job submitted by the trainee. This evidence is signed by the trainee at the time of submission of the job piece.
- The assessor/assessment co-ordinator needs to measure the dimensions and finish of the submitted job piece as per the tolerance or standards mentioned in the assessment guide.

3) **Segregate learners into batches:**

- Assign combination of one critical and one elementary NOS along with the soft skill NOS
- Allocate time to learner
- Ask learners to be present 5 minutes earlier than the time allotted at the lab

4) **Conduct Practical Assessments:**

- Assign practical task to the learners
- Ask the learner to collect articles and be ready for assessments
- Observe learner conducting the assigned task
- Evaluate and Record observations and marks and in the recording sheets
- You may ask learners question on the task being done

5) **Conduct Viva:**

- Ask questions from the learners on the assigned task
- Ask questions prescribed in the assessment guide on non-prescribed tasks to ensure that the learners have complete knowledge on the assessment

6) **Collate Results:**

- Check written answer scripts
- Sum up the practical NOS marks
- Sum up the viva marks
- Remember to sign off on all sheets where scores are mentioned
- Submit the collated result to assessment body representative/project manager

7) **Surprise Visits/Surveillance check** is kept to ensure the quality and fair assessments.

POST-ASSESSMENT PHASE

1) **Verify Result**

- Check for accuracy of names and date of birth
- Check for accuracy of marks against each learner
- Ensure that the pass percentage is correctly applied to the result
- Ensure that the learner has cleared all sections of the assessments in line with the HSSC assessment strategy
- Check if the excel sheet for each learner is accurately filled and is available for cross referencing with the covering result sheet
- Each and every result has to get cross-verified by HSSC official

2) **Upload/Sharing of Results**

- Once the results are ready it is uploaded on the SDMS website/portal and verified on the same
- Or the results are shared to Training institute only by HSSC.
- In case of any query or issue raised for assessment, the assessments are subjected to re-evaluation as per protocol laid down by HSSC.

3) **Documentation**

- Question papers are kept in secure cupboard with limited and controlled access.
- Used OMR sheets are to be stored for the next ten years
- QP should be always current version

Assessment process and guidelines are attached as Annexure 7

Please attach any documents giving further information about assessment and/or RPL.
Give details of the document(s) here:

1. **Quality Assurance Strategy of Assessment in HSSC attached as Annexure 7**
2. **Assessment Criteria attached as Annexure 8**

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as per the assessment criteria. Insert the required number of rows.

Job Role	Radiation Therapy Technologist
Qualification Pack Code	(HSS/Q 0601)
Sector Skill Council	Healthcare Sector Skill Council

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score as per assessment grid.
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Skills Practical and Viva (80% weightage)	
	Marks Alloted
Grand Total-1 (Subject Domain)	**400**
Grand Total-2 (Soft Skills and Comunication)	**100**
Grand Total-(Skills Practical and Viva)	**500**
Passing Marks (80% of Max. Marks)	**400**
Theory (20% weightage)	

	Marks Alloted
Grand Total-1 (Subject Domain)	**80**
Grand Total-2 (Soft Skills and Comunication)	**20**
Grand Total-(Theory)	**100**
Passing Marks (50% of Max. Marks)	**50**
Grand Total-(Skills Practical and Viva + Theory)	**600**
Overall Result	**Criteria is to pass in both theory and practical individually. If fail in any one of them, then candidate is fail**

Detailed Break Up of Marks		**Skills Practical & Viva**			
Subject Domain		**Pick any 2 NOS (2 elements from each NOS each of 100 marks) each of 200 marks totalling 400**			
Assessable Outcomes	**Assessment Criteria for the Assessable Outcomes**	**Total Marks (400)**	**Out Of**	**Marks Allocation**	
				Viva	**Skills Practical**
1. HSS/N 0601: Work effectively in radiation therapy practice	PC1. Conduct and professional behaviour is consistent with nationally and internationally accepted standards of best practice	**200**	5	0	5
	PC2.Manage personal, mental and physical health to ensure fitness to practice (AUS 1.1.b; UK 3.1, 3.2)		5	0	5
	PC3. Follow ethical and legal requirements in decision-making in all work undertaken with awareness of potential ethical complexity in own work role (AUS 1.1.g; UK 1.1)		5	0	5
	PC4. Reflect understanding and compliance with the principles of duty of care and legal responsibilities in all work undertaken (AUS 1.1.a; 1.1.g; UK 2.8)		10	5	5
	PC5.Provide relevant information to patient and use appropriate methods to obtain informed consent (UK 2.7)		10	5	5

	PC6. Respect and maintain privacy, confidentiality and consent / permission of patient/patient, family, significant others, colleagues and employing organisation (AUS 1.1.e; UK 2.4, 7.1, 7.2, 7.3)	10	2	8
	PC7. Advocate on behalf of the patient including: supporting and promoting the rights and interests of individuals · assisting individuals to achieve or maintain their rights and representing their needs · recognising when it may be appropriate to intervene on the patient's behalf · Advising other members of the health care team about the suitability and application of the proposed medical radiation procedure, when appropriate (AUS 1.4; UK2.3)	10	5	5
	PC8. Report to seniors concerning any error made in connection with patient's treatment and care	5	0	5
	PC9. Adhere to organizational and departmental policies, procedures and protocols and guidelines relevant to the role	10	5	5
	PC10. Recognise and respond appropriately to unsafe or unprofessional practice	10	5	5
	PC11. Integrate organisational policies and guidelines with professional standards	10	5	5
	PC12. Apply relevant quality frameworks	10	5	5
	PC13. Perform daily work tasks and responsibilities in an organised, timely and goaldriven manner	10	5	5
	PC14. Effectively manage daily work load using a range of professional skills, including professional reasoning, prioritisation, problem-solving, adaptation, negotiation and delegation	10	0	10
	PC15. Manage changing circumstances by reassessing work priorities and adapting work	5	2	3

	practices				
	PC16. Complete necessary work tasks according to expected performance standards and timeframes		5	2	3
	PC17. Contribute to the team to enable effective services integration, focused on shared patient-centred goals		5	2	3
	PC18. Use and manage workplace resources efficiently, safely and responsibly to support practice within financial constraints		5	0	5
	PC19. Perform workplace tasks to a standard consistent with the requirements of work place protocols, procedures and legislation		5	2	3
	PC20. Complete administrative duties accurately, systematically and within established timeframes		4	2	2
	PC21. Effectively use established communication systems and protocols within the work environments to support practice (AUS 2.2.c)		5	3	2
	PC22.Contribute to team effectiveness		6	4	2
	PC23. Collaborate with other health practitioners (AUS2.2)		10	5	5
	PC24. Deliver effective services to a standard commensurate with experience, support and workplace expectations		10	5	5
	PC25. Apply an understanding of the principles and processes of safety, continuous quality improvement (CQI) and quality assurance (QA) (UK12.3, 12.4)		10	5	5
	PC26. Participate in relevant workplace and professional quality improvement activities (UK 12.6)		10	5	5
	TOTAL		200	79	121
2.HSS/N 0602: Implement safe radiation practice to protect and enhance patient	PC1. Apply an understanding of national radiation safety legislation, radiation safety guidelines and international best practice for radiation (AUS 4.1.a)	**200**	10	5	5

safety	PC2. Apply principles of risk management relevant to radiation (AUS 4.1.b)		5	2	3
	PC3. Identify radiation risks and applyrelated risk control systems and procedures (AUS 4.1.c)		10	5	5
	PC4. Identify and apply safe radiation practice (AUS 4.1.d)		10	5	5
	PC5. Follow patient identification procedures to confirm the correct match of patient with intended procedure (AUS 4.2.a)		10	6	4
	PC6. Review, communicate, record and manage client information accurately, consistent with protocols, procedures and legislative requirements for maintaining patient records (AUS 4.2.b; UK 10.1, 10.2)		10	5	5
	PC7. Identify and manage risks associated with patient transfers (AUS 4.2.c)		10	5	5
	PC8.Identify and manage risk of infection, including during aseptic procedures(AUS 4.2 D)		10	5	5
	PC9. Deliver radiation therapy in accordance with the prescription, parameters and instructions		10	4	6
	PC10. Apply knowledge of function and limitations of equipment and instrumentation to confirm that it is in good order and operating within acceptable operating parameters(AUS 4.3.a)		10	3	7
	PC11.Identify unacceptable condition of operation of equipment and instrumentation (AUS 4.3.b)		10	7	3
	PC12.Follow protocols to record and report non-conformance of equipment(AUS 4.3.c)		10	6	4
	PC13. Follow protocols for delivery of treatment subsequent to correction of nonconformance		5	2	3
	PC14.Apply knowledge of legal responsibilities for health and safety of self and others (AUS 4.4.a)		5	2	3
	PC15. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification(AUS		5	3	2

	4.4.b)				
	PC16.Identify, confirm and implement methods of radiation management(AUS 4.4.c)		5	2	3
	PC17. Apply knowledge of interactions with matter, early and late effects and stochastic and deterministic effects of radiation exposure(AUS 4.4.d)		10	5	5
	PC18. Identify occupancy risks related to proximity of radiation and radioactive storage(AUS 4.4.e)		10	5	5
	PC19. Apply knowledge of layout planning considerations for radiation installations		10	4	6
	PC20. Provide information on radiation-related hazards and control measures to others in the workplace(AUS 4.4.f)		5	2	3
	PC21. Use appropriate personal protective clothing, equipment and personnel monitoring devices(AUS 4.4.g)		5	3	2
	PC22. Apply knowledge of the environmental risks of manufactured radiation and radioactivity(AUS 5.1.a)		5	2	3
	PC23. Identify and implement safe and legal methods during possession, use, storage and disposal of radiation sources including understanding of shielding requirements(AUS 5.1.b)		5	3	2
	PC24. Implement protocols and procedures in response to event reporting in radiation therapy AUS 5.1.c)		5	2	3
	PC25. Report incidents in accordance with protocols, procedures and legal requirements(AUS 5.1.d)		10	5	5
	TOTAL		200	98	102
3. HSS/N 0603: Plan and prepare patient for radiation therapy treatment according to a plan prescribed	PC1. Determine immobilisation methods suitable for simulation, planning and treatment in consultation with the treating physician and medical physicist; and appropriate to the patient's condition and presentation (AUS	**200**	10	5	5

by radiologist & oncologist	5C.1.a)				
	PC2. Identify and explain the immobilisation required for a particular radiation therapy procedure and/or treatment technique (AUS 5C.1.b)		10	5	5
	PC3. Fabricate or adapt suitable immobilisation devices and ancillary equipment as required in radiation therapy (AUS 5C.1.c)		10	5	5
	PC4. Recognise limitations/restrictions in the use of stabilisation and immobilisation devices (AUS 5C.1.d)		10	5	5
	PC5. Evaluate images for patient by applying knowledge of oncologic physiology (AUS5C.2.a)		10	5	5
	PC6. Apply an understanding of imaging modalities suited to individual patient presentations and related planning procedures (AUS5C.2.b)		10	5	5
	PC7. Perform CT-based simulation for all major cancer sites, patient presentations and related planning procedures (AUS5C.2.c)		10	5	5
	PC8. Apply an understanding of the use of MRI and PET in simulation imaging AUS5C.2.d)		20	10	10
	PC9. Apply knowledge about the suitability and feasibility of using the immobilisation devices in MRI and in PET		10	5	5
	PC10. Apply knowledge of the design and operation of general all imaging modalities (e.g. CT, MRI, PET-CT) systems (AUS5C.4.a)		10	5	5
	PC11. Apply knowledge of imaging parameters, scan protocols and relative dose levels based on the range of patient presentations (AUS5C.4.b)		10	5	5

	PC12. Perform and evaluate CT examinations of the body and when appropriate, modify them to take into account patient/client presentation and clinical indications (AUS5C.4.c)		10	5	5
	PC13. Apply post processing techniques, including multi-planar reformats and volume imaging (AUS5C.4.d)		10	5	5
	PC14. Apply knowledge of DICOM and DICOM-RT objects		20	10	10
	PC15. Transmit the selected images/image series to the appropriate treatment planning systems through the network		10	5	5
	PC16. Apply knowledge of legislative responsibilities relating to ownership, storage, retention and destruction of patient records and other practice documentation		10	5	15
	PC17. Apply knowledge of patient information management systems including Picture Archiving and Communication System, Radiation Oncology Information Systems, Radiology Information System, Electronic Medical Records, risk management systems		10	15	5
	PC18. Ensure correct verification and management of information		10	4	6
	TOTAL		200	109	111
4. HSS/N 0604: Deliver radiation therapy treatment according to a plan prescribed by radiologist & oncologist."	PC1. Review the patient's clinical prescription and instructions and match with treatment plan, referral and current medical information to confirm the requested procedure is appropriate (the four R's (right patient, right procedure, right site, right laterality) (AUS5.4.a)	**200**	10	5	5
	PC2. Determine the appropriate imaging and/or treatment protocols and priorities, in accordance with the clinical prescription and instructions (AUS5.4.b)		10	5	5
	PC3. Ensure that clinical instructions are followed.		10	5	5

	PC4. Identify factors or conditions that may affect the patient's behaviour and /or capacity to undergo the procedure including pre-existing medical and/or physical and physiological conditions, age, pregnancy, psycho-social, socioeconomic, culture, language skills (AUS5.5.a)		10	5	5
	PC5. Apply knowledge of patient preparation requirements (AUS5.5.b)		10	5	5
	PC6. dentify patients most at risk; including pregnant women and the foetus; breast feeding mothers and their children (AUS5.5.c)		10	5	5
	PC7.Identify contraindications and limitations of medical radiation services; determine appropriate adjustments to procedures; and communicate these to the patient (AUS5.5.d)		5	2	3
	PC8. Confirm treatment plan with Radiation Oncology team		10	5	5
	PC9. Complete required check lists		10	5	5
	PC10. Assess patient's general condition and treatment reaction during the radiation treatment and report to treating physician(AUS5.5.e)		10	5	5
	PC11. Based on patient's condition justify the delivery of treatment (MRTB,NZ 7.1.1)		10	5	5
	Pc12. Apply an understanding of the safe and effective use, design and operation of radiation therapy treatment systems (AUS 5.5.a)		10	5	5
	PC13. Implement requirements for treatment delivery recording systems (AUS 5.5.b)		10	5	5
	PC14. Implement the developed plans in accordance with clinical prescriptions and instructions (AUS 5.5.c)		10	5	5
	PC15. Apply an understanding of, and verify, the treatment parameters (MRTB,NZ 7.1.1)		10	5	5

	PC16. Implement the available imaging systems to verify patient positioning before delivery of radiation therapy treatment. Justify additional imaging radiation exposure for verification.		5	2	3
	PC17. Apply correct radiation type and use of correct accessories to deliver radiation treatment.		10	5	5
	PC18. Continuously monitor patient undergoing radiation treatment		10	5	5
	PC19. Manage and manipulate 3D datasets for patient positioning on treatment table (AUS5.7)		5	2	3
	PC20. Identify and respond to a patient's deteriorating condition, or inability to undergo a procedure or treatment, consistent with duty of care requirements (AUS5.6.b)		10	5	5
	PC21. Use safe procedures for manual handling, transferring and patient positioning (MRTB,NZ 7.2.2)		5	2	3
	PC22. Convey information and report when significant findings are identified by implementing protocols or instructions. (AUS5.6.b)		10	5	5
	TOTAL		200	98	102
5. HSS/N 0605:Engage in evidence-based practice and professional learning	PC1.Describe the clinical challenge or question (AUS3.1.a)	**200**	20	10	10
	PC2.Identify information required to respond to the challenge or question (AUS3.1.b)		10	5	5
	PC3.Select appropriate methods to collect and assess evidence (AUS3.1.c)		20	10	10
	PC4.Identify, access or collect information from credible sources (AUS3.1.d; UK 12.2, 12.5)		20	10	10
	PC5. Assess adequacy of information to answer the issue under inquiry (AUS3.1.e)		10	5	5
	PC6. Interpret findings, applying clinical reasoning and reflective processes to identify implications for practice (AUS3.1.f)		10	5	5
	PC7. Review clinical action plans/protocols to take account of findings (AUS3.1.g)		10	5	5

	PC8. Demonstrate understanding of professional responsibilities to undertake continuing professional development (CPD) (AUS3.2.a; UK 4.6)		10	5	5
	PC9. Demonstrate an awareness of the boundaries of their professional competence and responsibilities and seeks advice, education and training, further support and supervision when required(AUS3.2.b)		10	5	5
	PC10.Critically reflect on personal strengths and limitations to identify learning required to improve and adapt professional practice(AUS3.2.b)		10	5	5
	PC11. Seek input from others to confirm learning needs of self and others to deliver improved client outcomes(AUS3.2.c)		10	5	5
	PC12. Plan and implement steps to address professional development needs(AUS3.2.d)		30	10	20
	PC13. Critically evaluate and share with others new information and knowledge and integrate into practice as appropriate		30	10	20
	TOTAL		200	110	90
6. HSS/ N 9614 : Recognize Healthy body systems	PC1. Correctly use and interpret the medical terminology that describes normal structure, function & location of major body systems	**200**	30	10	20
	PC2. Correctly use and interpret the information that relates to the interrelationship between major components of each body system and other structure		40	20	20
	PC3. Review the factors that contribute to maintain whole body health		60	20	40
	PC4. Evaluate how relationship between different body systems affect and support healthy functioning		40	10	30
	PC5. Enhance quality of work by using and sharing information about healthy functioning of the body		30	10	20
	TOTAL		200	70	130

7. HSS/ N 9608: Follow radiation safety guidelines	PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area	**200**	20	15	5
	PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk and the recipients' exposure time		30	20	10
	PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant legislation requirements		20	15	5
	PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and other personnel		30	20	10
	PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice		20	10	10
	PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences		20	0	10
	PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice		10	5	5
	PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols		10	5	5
	PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation		20	5	15
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		20	10	10
	TOTAL		200	105	85

8. HSS/ N 9610 (Follow infection control policies and procedures)	PC1. Preform the standard precautions to prevent the spread of infection in accordance with organisation requirements	**200**	5	0	5
	PC2. Preform the additional precautions when standard precautions alone may not be sufficient to prevent transmission of infection		5	0	5
	PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter		5	5	0
	PC4. Identify infection risks and implement an appropriate response within own role and responsibility		20	10	10
	PC5. Document and report activities and tasks that put patients and/or other workers at risk		5	0	5
	PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization		5	0	5
	PC7. Follow procedures for risk control and risk containment for specific risks		10	0	10
	PC8. Follow protocols for care following exposure to blood or other body fluids as required		10	0	10
	PC9. Place appropriate signs when and where appropriate		20	10	10
	PC10. Remove spills in accordance with the policies and procedures of the organization		5	0	5
	PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination		5	0	5
	PC12. Follow hand washing procedures		5	0	5
	PC13. Implement hand care procedures		5	0	5
	PC14. Cover cuts and abrasions with water-proof dressings and change as necessary		5	5	0
	PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended		5	0	5

	use				
	PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact		5	0	5
	PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work		20	10	10
	PC18. Confine records, materials and medicaments to a well-designated clean zone				
	PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone				
	PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste		5	0	5
	PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified		5	0	5
	PC22. Store clinical or related waste in an area that is accessible only to authorised persons		5	5	0
	PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release		5	0	5
	PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements		5	5	0
	PC25. Wear personal protective clothing and equipment during cleaning procedures		5	0	5
	PC26. Remove all dust, dirt and physical debris from work surfaces		5	0	5
	PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled		5	0	5

	PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols		5	0	5
	PC29. Dry all work surfaces before and after use		5	0	5
	PC30. Replace surface covers where applicable		5	0	5
	PC31. Maintain and store cleaning equipment		5	5	0
	TOTAL		200	55	145
Grand Total-1 (Subject Domain)		**400**			

Soft Skills and Communication		**Pick one field from both parts each carrying 50 marks totalling 100**			
Assessable Outcomes	**Assessment Criteria for the Assessable Outcomes**	**Total Marks (100)**	**Out Of**	**Marks Allocation**	
				Viva	**Observation/ Role Play**
Part 1 (Pick one field randomly carrying 50 marks)					
1. Attitude					
HSS/ N 9603 (Act within the limits of one's competence and authority)	PC1. Adhere to legislation, protocols and guidelines relevant to one's role and field of practice	**50**	5	1	4
	PC2. Work within organisational systems and requirements as appropriate to one's role		5	2	3
	PC3. Recognise the boundary of one's role and responsibility and seek supervision when situations are beyond one's competence and authority		10	5	5
	PC4. Maintain competence within one's role and field of practice		5	2	3
	PC5. Use relevant research based protocols and guidelines as evidence to inform one's practice		5	2	3
	PC6. Promote and demonstrate good practice as an individual and as a team member at all times		5	3	2
	PC7. Identify and manage potential and actual risks to the quality and		10	5	5

	safety of practice				
	PC8. Evaluate and reflect on the quality of one's work and make continuing improvements		5	2	3
			50	22	28
Attitude Total		**50**			
2. Work Management					
HSS/ N 9602 (Ensure availability of medical and diagnostic supplies)	PC1. Maintain adequate supplies of medical and diagnostic supplies	**25**	5	5	0
	PC2. Arrive at actual demand as accurately as possible		5	3	2
	PC3. Anticipate future demand based on internal, external and other contributing factors as accurately as possible		10	5	5
	PC4. Handle situations of stock-outs or unavailability of stocks without compromising health needs of patients/ individuals		5	5	0
			25	18	7
HSS/N 0606: Communicate and collaborate effectively	PC1.Establish rapport with patient to gain understanding of their issues and perspectives (AUS2.1.a; UK 5.1, 5.2)	**25**	3	0	3
	PC2.Communicate with the patient and/or carers to collect and convey information and reach agreement about the purpose of the examination/treatment, techniques and procedures (AUS2.1.b; UK 5.2, 9.3)		2	1	1
	PC3.Convey knowledge and procedural information in ways that engender trust and confidence and respects patient confidentiality, privacy and dignity		2	0	2
	PC4.Respond to patient/client queries or issues (AUS2.1.c; UK 5.3)		2	0	2
	PC5. Identify and respond to likely communication barriers specific to individual patient and/or carers (AUS2.1.d)		2	0	2
	PC6.Make provisions to engage third parties to facilitate effective communication when required (AUS2.1.f)		2	0	2
	PC7. Establish and maintain effective and respectful working relationships with health		5	0	5

	practitioners (AUS2.2.a; UK 9.1, 9.2)				
	PC8. Apply an understanding of professional roles and responsibilities of healthcare team members and other service providers including include registered health practitioners, accredited health professionals, and licensed and unlicensed healthcare workers (AUS2.2.b; UK 9.5)		2	0	2
	PC9. Follow accepted protocols and procedures to provide relevant and timely verbal and written communication (AUS2.2.c; UK 8.9)		5	2	3
			25	3	22
Work Management Total		**50**			
Part 2 (Pick one field as per NOS marked carrying 50 marks)					
2. Safety management (Evaluate with NOS: HSS/N/0301, 0302, 0303, 0409, 9610)					
HSS/ N 9606 (Maintain a safe, healthy, and secure working environment)	PC1. Identify individual responsibilities in relation to maintaining workplace health safety and security requirements	**50**	6	2	4
	PC2. Comply with health, safety and security procedures for the workplace		4	0	4
	PC3. Report any identified breaches in health, safety, and security procedures to the designated person		4	3	1
	PC4. Identify potential hazards and breaches of safe work practices		6	4	2
	PC5. Correct any hazards that individual can deal with safely, competently and within the limits of authority		6	4	2
	PC6. Promptly and accurately report the hazards that individual is not allowed to deal with, to the relevant person and warn other people who may get affected		6	4	2
	PC7. Follow the organisation's emergency procedures promptly, calmly, and efficiently		6	2	4
	PC8. Identify and recommend opportunities for improving health, safety, and security to the designated person		6	4	2

	PC9. Complete any health and safety records legibly and accurately		6	2	4
			50	25	25
3. Waste Management (Evaluate with NOS: HSS/N/5105, 5108, 5114, 5115)					
HSS/ N 9609 (Follow biomedical waste disposal protocols)	PC1. Follow the appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type	**50**	6	2	4
	PC2. Apply appropriate health and safety measures and standard precautions for infection prevention and control and personal protective equipment relevant to the type and category of waste		8	4	4
	PC3. Segregate the waste material from work areas in line with current legislation and organisational requirements		4	0	4
	PC4. Segregation should happen at source with proper containment, by using different colour coded bins for different categories of waste		8	4	4
	PC5. Check the accuracy of the labelling that identifies the type and content of waste		4	2	2
	PC6. Confirm suitability of containers for any required course of action appropriate to the type of waste disposal		4	4	0
	PC7. Check the waste has undergone the required processes to make it safe for transport and disposal		4	4	0
	PC8. Transport the waste to the disposal site, taking into consideration its associated risks		4	4	0
	PC9. Report and deal with spillages and contamination in accordance with current legislation and procedures		4	4	0
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		4	4	0
			50	32	18

HSS/ N 9611: Monitor and assure quality	PC1. Conduct appropriate research and analysis	50	6	2	4
	PC2. Evaluate potential solutions thoroughly		8	4	4
	PC3. Participate in education programs which include current techniques, technology and trends pertaining to the dental industry		4	0	4
	PC4. Read Dental hygiene, dental and medical publications related to quality consistently and thoroughly		8	4	4
	PC5. Report any identified breaches in health, safety, and security procedures to the designated person		4	2	2
	PC6. Identify and correct any hazards that he/she can deal with safely, competently and within the limits of his/her authority		4	4	0
	PC7. Promptly and accurately report any hazards that he/she is not allowed to deal with to the relevant person and warn other people who may be affected		4	4	0
	PC8. Follow the organisation's emergency procedures promptly, calmly, and efficiently		4	4	0
	PC9. Identify and recommend opportunities for improving health, safety, and security to the designated person		4	4	0
	PC10. Complete any health and safety records legibly and accurately		4	4	0
			50	32	18
Grand Total-2 (Soft Skills and Communication)		**100**			

Detailed Break Up of Marks		**Theory**	
Subject Domain		**Pick each NOS Compulsorily totalling 80**	
Assessable Outcomes	**Assessment Criteria for the Assessable Outcomes**	**Total Marks (80)**	**Marks Allocation** **Theory**
1. HSS/N 0601: Work effectively in radiation therapy practice	PC1. Conduct and professional behaviour is consistent with nationally and internationally accepted standards of best practice	**10**	10

	PC2.Manage personal, mental and physical health to ensure fitness to practice (AUS 1.1.b; UK 3.1, 3.2)		
	PC3. Follow ethical and legal requirements in decision-making in all work undertaken with awareness of potential ethical complexity in own work role (AUS 1.1.g; UK 1.1)		
	PC4. Reflect understanding and compliance with the principles of duty of care and legal responsibilities in all work undertaken (AUS 1.1.a; 1.1.g; UK 2.8)		
	PC5.Provide relevant information to patient and use appropriate methods to obtain informed consent (UK 2.7)		
	PC6. Respect and maintain privacy, confidentiality and consent / permission of patient/patient, family, significant others, colleagues and employing organisation (AUS 1.1.e; UK 2.4, 7.1, 7.2, 7.3)		
	PC7. Advocate on behalf of the patient including: supporting and promoting the rights and interests of individuals · assisting individuals to achieve or maintain their rights and representing their needs · recognising when it may be appropriate to intervene on the patient's behalf · Advising other members of the health care team about the suitability and application of the proposed medical radiation procedure, when appropriate (AUS 1.4; UK2.3)		
	PC8. Report to seniors concerning any error made in connection with patient's treatment and care		
	PC9. Adhere to organizational and departmental policies, procedures and protocols and guidelines relevant to the role		
	PC10. Recognise and respond appropriately to unsafe or unprofessional practice		
	PC11. Integrate organisational policies and guidelines with professional standards		
	PC12. Apply relevant quality frameworks		
	PC13. Perform daily work tasks and responsibilities in an organised, timely and goaldriven manner		

	PC14. Effectively manage daily work load using a range of professional skills, including professional reasoning, prioritisation, problem-solving, adaptation, negotiation and delegation		
	PC15. Manage changing circumstances by reassessing work priorities and adapting work practices		
	PC16. Complete necessary work tasks according to expected performance standards and timeframes		
	PC17. Contribute to the team to enable effective services integration, focused on shared patient-centred goals		
	PC18. Use and manage workplace resources efficiently, safely and responsibly to support practice within financial constraints		
	PC19. Perform workplace tasks to a standard consistent with the requirements of work place protocols, procedures and legislation		
	PC20. Complete administrative duties accurately, systematically and within established timeframes		
	PC21. Effectively use established communication systems and protocols within the work environments to support practice (AUS 2.2.c)		
	PC22.Contribute to team effectiveness		
	PC23. Collaborate with other health practitioners (AUS2.2)		
	PC24. Deliver effective services to a standard commensurate with experience, support and workplace expectations		
	PC25. Apply an understanding of the principles and processes of safety, continuous quality improvement (CQI) and quality assurance (QA) (UK12.3, 12.4)		
	PC26. Participate in relevant workplace and professional quality improvement activities (UK 12.6)		
	Total		10
2.HSS/ N 0202: Prepare the patient and the room for the procedure	PC1. Apply an understanding of national radiation safety legislation, radiation safety guidelines and international best practice for radiation (AUS 4.1.a)	**10**	10

	PC2. Apply principles of risk management relevant to radiation (AUS 4.1.b)		
	PC3. Identify radiation risks and applyrelated risk control systems and procedures (AUS 4.1.c)		
	PC4. Identify and apply safe radiation practice (AUS 4.1.d)		
	PC5. Follow patient identification procedures to confirm the correct match of patient with intended procedure (AUS 4.2.a)		
	PC6. Review, communicate, record and manage client information accurately, consistent with protocols, procedures and legislative requirements for maintaining patient records (AUS 4.2.b; UK 10.1, 10.2)		
	PC7. Identify and manage risks associated with patient transfers (AUS 4.2.c)		
	PC8.Identify and manage risk of infection, including during aseptic procedures(AUS 4.2 D)		
	PC9. Deliver radiation therapy in accordance with the prescription, parameters and instructions		
	PC10. Apply knowledge of function and limitations of equipment and instrumentation to confirm that it is in good order and operating within acceptable operating parameters(AUS 4.3.a)		
	PC11.Identify unacceptable condition of operation of equipment and instrumentation (AUS 4.3.b)		
	PC12.Follow protocols to record and report non-conformance of equipment(AUS 4.3.c)		
	PC13. Follow protocols for delivery of treatment subsequent to correction of nonconformance		
	PC14.Apply knowledge of legal responsibilities for health and safety of self and others (AUS 4.4.a)		
	PC15. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification(AUS 4.4.b)		
	PC16.Identify, confirm and implement methods of radiation management(AUS 4.4.c)		

	PC17. Apply knowledge of interactions with matter, early and late effects and stochastic and deterministic effects of radiation exposure(AUS 4.4.d)		
	PC18. Identify occupancy risks related to proximity of radiation and radioactive storage(AUS 4.4.e)		
	PC19. Apply knowledge of layout planning considerations for radiation installations		
	PC20. Provide information on radiation-related hazards and control measures to others in the workplace(AUS 4.4.f)		
	PC21. Use appropriate personal protective clothing, equipment and personnel monitoring devices(AUS 4.4.g)		
	PC22. Apply knowledge of the environmental risks of manufactured radiation and radioactivity(AUS 5.1.a)		
	PC23. Identify and implement safe and legal methods during possession, use, storage and disposal of radiation sources including understanding of shielding requirements(AUS 5.1.b)		
	PC24. Implement protocols and procedures in response to event reporting in radiation therapy AUS 5.1.c)		
	PC25. Report incidents in accordance with protocols, procedures and legal requirements(AUS 5.1.d)		
	Total		10
3. HSS/N 0603: Plan and prepare patient for radiation therapy treatment according to a plan prescribed by radiologist & oncologist	PC1. Determine immobilisation methods suitable for simulation, planning and treatment in consultation with the treating physician and medical physicist; and appropriate to the patient's condition and presentation (AUS 5C.1.a)	**10**	10
	PC2. Identify and explain the immobilisation required for a particular radiation therapy procedure and/or treatment technique (AUS 5C.1.b)		
	PC3. Fabricate or adapt suitable immobilisation devices and ancillary equipment as required in radiation therapy (AUS 5C.1.c)		
	PC4. Recognise limitations/restrictions in the use of stabilisation and immobilisation devices (AUS 5C.1.d)		
	PC5. Evaluate images for patient by applying knowledge of oncologic physiology (AUS5C.2.a)		

	PC6. Apply an understanding of imaging modalities suited to individual patient presentations and related planning procedures (AUS5C.2.b)		
	PC7. Perform CT-based simulation for all major cancer sites, patient presentations and related planning procedures (AUS5C.2.c)		
	PC8. Apply an understanding of the use of MRI and PET in simulation imaging AUS5C.2.d)		
	PC9. Apply knowledge about the suitability and feasibility of using the immobilisation devices in MRI and in PET		
	PC10. Apply knowledge of the design and operation of general all imaging modalities (e.g. CT, MRI, PET-CT) systems (AUS5C.4.a)		
	PC11. Apply knowledge of imaging parameters, scan protocols and relative dose levels based on the range of patient presentations (AUS5C.4.b)		
	PC12. Perform and evaluate CT examinations of the body and when appropriate, modify them to take into account patient/client presentation and clinical indications (AUS5C.4.c)		
	PC13. Apply post processing techniques, including multi-planar reformats and volume imaging (AUS5C.4.d)		
	PC14. Apply knowledge of DICOM and DICOM-RT objects		
	PC15. Transmit the selected images/image series to the appropriate treatment planning systems through the network		
	PC16. Apply knowledge of legislative responsibilities relating to ownership, storage, retention and destruction of patient records and other practice documentation		
	PC17. Apply knowledge of patient information management systems including Picture Archiving and Communication System, Radiation Oncology Information Systems, Radiology Information System, Electronic Medical Records, risk management systems		
	PC18. Ensure correct verification and management of information		
	Total		10

4. HSS/N 0604: Deliver radiation therapy treatment according to a plan prescribed by radiologist & oncologist."	PC1. Review the patient's clinical prescription and instructions and match with treatment plan, referral and current medical information to confirm the requested procedure is appropriate (the four R's (right patient, right procedure, right site, right laterality) (AUS5.4.a)		
	PC2. Determine the appropriate imaging and/or treatment protocols and priorities, in accordance with the clinical prescription and instructions (AUS5.4.b)		
	PC3. Ensure that clinical instructions are followed.		
	PC4. Identify factors or conditions that may affect the patient's behaviour and /or capacity to undergo the procedure including pre-existing medical and/or physical and physiological conditions, age, pregnancy, psycho-social, socioeconomic, culture, language skills (AUS5.5.a)		
	PC5. Apply knowledge of patient preparation requirements (AUS5.5.b)		
	PC6. dentify patients most at risk; including pregnant women and the foetus; breast feeding mothers and their children (AUS5.5.c)	**10**	10
	PC7.Identify contraindications and limitations of medical radiation services; determine appropriate adjustments to procedures; and communicate these to the patient (AUS5.5.d)		
	PC8. Confirm treatment plan with Radiation Oncology team		
	PC9. Complete required check lists		
	PC10. Assess patient's general condition and treatment reaction during the radiation treatment and report to treating physician(AUS5.5.e)		
	PC11. Based on patient's condition justify the delivery of treatment (MRTB,NZ 7.1.1)		
	Pc12. Apply an understanding of the safe and effective use, design and operation of radiation therapy treatment systems (AUS 5.5.a)		
	PC13. Implement requirements for treatment delivery recording systems (AUS 5.5.b)		
	PC14. Implement the developed plans in accordance with clinical prescriptions and		

	instructions (AUS 5.5.c)		
	PC15. Apply an understanding of, and verify, the treatment parameters (MRTB,NZ 7.1.1)		
	PC16. Implement the available imaging systems to verify patient positioning before delivery of radiation therapy treatment. Justify additional imaging radiation exposure for verification.		
	PC17. Apply correct radiation type and use of correct accessories to deliver radiation treatment.		
	PC18. Continuously monitor patient undergoing radiation treatment		
	PC19. Manage and manipulate 3D datasets for patient positioning on treatment table (AUS5.7)		
	PC20. Identify and respond to a patient's deteriorating condition, or inability to undergo a procedure or treatment, consistent with duty of care requirements (AUS5.6.b)		
	PC21. Use safe procedures for manual handling, transferring and patient positioning (MRTB,NZ 7.2.2)		
	PC22. Convey information and report when significant findings are identified by implementing protocols or instructions. (AUS5.6.b)		
	Total		10
5. HSS/N 0605:Engage in evidence-based practice and professional learning	PC1.Describe the clinical challenge or question (AUS3.1.a)	**10**	10
	PC2.Identify information required to respond to the challenge or question (AUS3.1.b)		
	PC3.Select appropriate methods to collect and assess evidence (AUS3.1.c)		
	PC4.Identify, access or collect information from credible sources (AUS3.1.d; UK 12.2, 12.5)		
	PC5. Assess adequacy of information to answer the issue under inquiry (AUS3.1.e)		
	PC6. Interpret findings, applying clinical reasoning and reflective processes to identify implications for practice (AUS3.1.f)		
	PC7. Review clinical action plans/protocols to take account of findings (AUS3.1.g)		
	PC8. Demonstrate understanding of professional responsibilities to undertake		

	continuing professional development (CPD) (AUS3.2.a; UK 4.6)		
	PC9. Demonstrate an awareness of the boundaries of their professional competence and responsibilities and seeks advice, education and training, further support and supervision when required(AUS3.2.b)		
	PC10.Critically reflect on personal strengths and limitations to identify learning required to improve and adapt professional practice(AUS3.2.b)		
	PC11. Seek input from others to confirm learning needs of self and others to deliver improved client outcomes(AUS3.2.c)		
	PC12. Plan and implement steps to address professional development needs(AUS3.2.d)		
	PC13. Critically evaluate and share with others new information and knowledge and integrate into practice as appropriate		
	Total		10
6. HSS/ N 9614 : Recognize Healthy body systems	PC1. Correctly use and interpret the medical terminology that describes normal structure, function & location of major body systems	**10**	10
	PC2. Correctly use and interpret the information that relates to the interrelationship between major components of each body system and other structure		
	PC3. Review the factors that contribute to maintain whole body health		
	PC4. Evaluate how relationship between different body systems affect and support healthy functioning		
	PC5. Enhance quality of work by using and sharing information about healthy functioning of the body		
	Total		10
7. HSS/ N 9608: Follow radiation safety guidelines	PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area	**10**	10
	PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk and the recipients' exposure time		
	PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant		

	legislation requirements		
	PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and other personnel		
	PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice		
	PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences		
	PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice		
	PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols		
	PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation		
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		
	Total		10
8. HSS/ N 9610 (Follow infection control policies and procedures)	PC1. Preform the standard precautions to prevent the spread of infection in accordance with organisation requirements	**10**	10
	PC2. Preform the additional precautions when standard precautions alone may not be sufficient to prevent transmission of infection		
	PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter		
	PC4. Identify infection risks and implement an appropriate response within own role and responsibility		
	PC5. Document and report activities and tasks that put patients and/or other workers at risk		

	PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization		
	PC7. Follow procedures for risk control and risk containment for specific risks		
	PC8. Follow protocols for care following exposure to blood or other body fluids as required		
	PC9. Place appropriate signs when and where appropriate		
	PC10. Remove spills in accordance with the policies and procedures of the organization		
	PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination		
	PC12. Follow hand washing procedures		
	PC13. Implement hand care procedures		
	PC14. Cover cuts and abrasions with water-proof dressings and change as necessary		
	PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended use		
	PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact		
	PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work		
	PC18. Confine records, materials and medicaments to a well-designated clean zone		
	PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone		
	PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste		
	PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified		
	PC22. Store clinical or related waste in an area that is accessible only to authorised persons		

	PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release		
	PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements		
	PC25. Wear personal protective clothing and equipment during cleaning procedures		
	PC26. Remove all dust, dirt and physical debris from work surfaces		
	PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled		
	PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols		
	PC29. Dry all work surfaces before and after use		
	PC30. Replace surface covers where applicable		
	PC31. Maintain and store cleaning equipment		
	Total		10
Grand Total-1 (Subject Domain)		**80**	**80**

Soft Skills and Communication		**Select each part each carrying 10 marks totalling 20**	
Assessable Outcomes	**Assessment Criteria for the Assessable Outcomes**	**Total Marks (20)**	**Marks Allocation** **Theory**
Part 1 (Pick one field randomly carrying 50 marks)			
1. Attitude			
HSS/ N 9603 (Act within the limits of one's competence and authority)	PC1. Adhere to legislation, protocols and guidelines relevant to one's role and field of practice	**3**	3
	PC2. Work within organisational systems and requirements as appropriate to one's role		

	PC3. Recognise the boundary of one's role and responsibility and seek supervision when situations are beyond one's competence and authority		
	PC4. Maintain competence within one's role and field of practice		
	PC5. Use relevant research based protocols and guidelines as evidence to inform one's practice		
	PC6. Promote and demonstrate good practice as an individual and as a team member at all times		
	PC7. Identify and manage potential and actual risks to the quality and safety of practice		
	PC8. Evaluate and reflect on the quality of one's work and make continuing improvements		
	Total		3
Attitude Total			
2. Work Management			
HSS/ N 9602 (Ensure availability of medical and diagnostic supplies)	PC1. Maintain adequate supplies of medical and diagnostic supplies	**4**	4
	PC2. Arrive at actual demand as accurately as possible		
	PC3. Anticipate future demand based on internal, external and other contributing factors as accurately as possible		
	PC4. Handle situations of stock-outs or unavailability of stocks without compromising health needs of patients/ individuals		
	Total		4
3. Attiquete			
HSS/N 0606: Communicate and collaborate effectively	PC1.Establish rapport with patient to gain understanding of their issues and perspectives (AUS2.1.a; UK 5.1, 5.2)	**3**	3
	PC2.Communicate with the patient and/or carers to collect and convey information and reach agreement about the purpose of the examination/treatment, techniques and procedures (AUS2.1.b; UK 5.2, 9.3)		
	PC3.Convey knowledge and procedural information in ways that engender trust and confidence and respects patient confidentiality, privacy and dignity		
	PC4.Respond to patient/client queries or issues (AUS2.1.c; UK 5.3)		

	PC5. Identify and respond to likely communication barriers specific to individual patient and/or carers (AUS2.1.d)		
	PC6.Make provisions to engage third parties to facilitate effective communication when required (AUS2.1.f)		
	PC7. Establish and maintain effective and respectful working relationships with health practitioners (AUS2.2.a; UK 9.1, 9.2)		
	PC8. Apply an understanding of professional roles and responsibilities of healthcare team members and other service providers including include registered health practitioners, accredited health professionals, and licensed and unlicensed healthcare workers (AUS2.2.b; UK 9.5)		
	PC9. Follow accepted protocols and procedures to provide relevant and timely verbal and written communication (AUS2.2.c; UK 8.9)		
	Total		3
Attiquete Total			
Part 2 (Pick one field as per NOS marked carrying 50 marks)			
1. Team Work (Evaluate with NOS: HSS/N/0304, 0305, 0306, 0307)			
2. Safety management (Evaluate with NOS: HSS/N/0301, 0302, 0303, 0409, 9610)			
HSS/ N 9606 (Maintain a safe, healthy, and secure working environment)	PC1. Identify individual responsibilities in relation to maintaining workplace health safety and security requirements	**3**	3
	PC2. Comply with health, safety and security procedures for the workplace		
	PC3. Report any identified breaches in health, safety, and security procedures to the designated person		
	PC4. Identify potential hazards and breaches of safe work practices		
	PC5. Correct any hazards that individual can deal with safely, competently and within the limits of authority		
	PC6. Promptly and accurately report the hazards that individual is not allowed to deal with, to the relevant person and warn other people who may get affected		
	PC7. Follow the organisation's emergency procedures promptly, calmly, and efficiently		
	PC8. Identify and recommend opportunities for improving health, safety, and security to the designated person		

	PC9. Complete any health and safety records legibly and accurately		
	Total		3
3. Waste Management (Evaluate with NOS: HSS/N/5105, 5108, 5114, 5115)			
HSS/ N 9609 (Follow biomedical waste disposal protocols)	PC1. Follow the appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type	**5**	5
	PC2. Apply appropriate health and safety measures and standard precautions for infection prevention and control and personal protective equipment relevant to the type and category of waste		
	PC3. Segregate the waste material from work areas in line with current legislation and organisational requirements		
	PC4. Segregation should happen at source with proper containment, by using different colour coded bins for different categories of waste		
	PC5. Check the accuracy of the labelling that identifies the type and content of waste		
	PC6. Confirm suitability of containers for any required course of action appropriate to the type of waste disposal		
	PC7. Check the waste has undergone the required processes to make it safe for transport and disposal		
	PC8. Transport the waste to the disposal site, taking into consideration its associated risks		
	PC9. Report and deal with spillages and contamination in accordance with current legislation and procedures		
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		
	Total		5
4. Quality Assurance			
HSS/ N 9611: Monitor and assure quality	PC1. Conduct appropriate research and analysis	2	2
	PC2. Evaluate potential solutions thoroughly		
	PC3. Participate in education programs which include current techniques, technology and trends pertaining to the dental industry		

	PC4. Read Dental hygiene, dental and medical publications related to quality consistently and thoroughly		
	PC5. Report any identified breaches in health, safety, and security procedures to the designated person		
	PC6. Identify and correct any hazards that he/she can deal with safely, competently and within the limits of his/her authority		
	PC7. Promptly and accurately report any hazards that he/she is not allowed to deal with to the relevant person and warn other people who may be affected		
	PC8. Follow the organisation's emergency procedures promptly, calmly, and efficiently		
	PC9. Identify and recommend opportunities for improving health, safety, and security to the designated person		
	PC10. Complete any health and safety records legibly and accurately		
Part 2 Total	**10**	2	
Grand Total-2 (Soft Skills and Communication)	**20**		

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed? While collecting data from the companies for the occupational map & functional analysis, we also took feedback from industry, which was collected with respect to roles for which qualification packs development, was to be prioritized. This was largely based on volume of people required, quantitative and qualitative shortfall which the Industry feels they face. Governing council of HSSC gave final approval and endorsement for the same.
What is the estimated uptake of this qualification and what is the basis of this estimate? The workforce in allied healthcare sector need expected to around 74 lac by 2022 double the workforce employed in 2013 as envisaged in Skills Gap analysis Reports for industry demand and secondary research data, though these do not lend to accurate demand projection. The link to NSDC Human Resource & Skills Requirement in Healthcare Sector is http://healthcare-ssc.in/images/Human%20Resource%20&%20Skills%20Requirement%20in%20Healthcare%20sector.pdf • Feedback from industry for demand though again sample size may not lend to accurate figures • Training duration, and current and potential training capacity envisaged • An LMIS development initiative is being put in place to be more precise regarding the demand and

supply
What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF? • NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work • Is being sent to NSDC QRC team for the confirmation of the same
What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? • Agencies/personnel would be appointed by the HSSC to interact with training providers, employers, assessors to gather feedback in implementation. • Monitoring of results of assessments, training delivery • Employer feedback will be sought post-placement • A formal review is scheduled in two year time

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

1. **Occupational Mapping Report-Annexure 2**
2. **Functional Analysis Report-Annexure 3**
3. **RFP for development of occupational standards-Annexure 4**
4. **Validation group and industry consultations- Annexure 5**
5. **The Brief Report on the whole process of the development, validation and notification of these qualification packs along with list of companies and Industry associations involved -Annexure 6**
6. **Human Resource & Skills Requirement in Healthcare Sector accessible on below given link:**

http://healthcare-ssc.in/images/Human%20Resource%20&%20Skills%20Requirement%20in%20Healthcare%20sector.pdf

SECTION 3

SUMMARY OF DIRECT EVIDENCE OF LEVEL

Justify the NSQF level allocated to the QP. Relate information about the job role and build upon the five descriptors for the level to justify.

Generic NOS is/are linked to the overall authority attached to the job role.

Qualification Title and Classification Code Blood Bank Technician (HSS/ Q 2801)					
Process required	**Professional knowledge**	**Professional skill**	**Core skill**	**Responsibility**	**Level**
RTT's are allied health care professionals who use beams of radiated lights to locate and treat cancerous tumors according to a	RTT's are health care professionals who use beams of radiated lights to locate and treat cancerous tumors according to a plan prescribed and within	Radiation Therapist Technologist (RTT) work closely with doctors, patients and other members of the health care team. They use advanced	RTT's requires to work in collaboration with other members of the healthcare team and deliver the healthcare	RTT's are responsible to work effectively in radiation therapy practice according to a plan prescribed by radiologist &	4

plan prescribed and within the guidelines set by supervisory radiologist & oncologist. They are also responsible for safety of the patient, for observing and documenting any reactions to treatment and answering any radiology related questions asked by patient and maintenance of equipment following all safety regulations regarding radiation exposure. He/She shall comply with the Atomic Energy Regulatory Board eligibility and safety regulatory requirements. This is an activity of a routine nature in a situation of clear choice as demanded by the workplace.	the guidelines set by supervisory radiologist & oncologist. This indicates that a Radiation Therapy technologist must have factual knowledge of field or study in order to perform activities correctly.	computer systems and radiation therapy equipment to implement treatment plans, including positioning the patient and operating the radiation therapy equipment; constructing and fitting accessory devices that shape, modify and direct the administered radiation. The individual should be result oriented and be able to demonstrate clinical skills, communication skills and ethical behaviour. All these are activities that require him/her to demonstrate his practical skill, as per the scope of the job role, using appropriate tool, quality concepts, responsible for carrying out range of activities, requiring either laid down approach or may adopt alternative approaches as per the best evidenced practices.	services as directed. The individual should be result oriented. The individual should also be able to demonstrate clinical skills, communication skills and ethical behaviour. Individuals must always perform their duties in a calm, reassuring and efficient manner. This requires communication skills (written or oral) with required clarity and indicates that he/she should have the basic understanding of social, political and natural environment.	oncologist Engage in evidence-based practice and professional learning This is critical as it indicates that the person is responsible for his own work and learning. This is further reconfirmed by the fact that The Radiation Therapy Technologist is expected to learn and improve his/her practice while on the job and is referred as “skilled workers”.	
Level: 4	Level: 4	Level: 4	Level: 4	Level: 4	4

OTHER EVIDENCE OF LEVEL [This need only be filled in where evidence other than primary outcomes was used to allocate a level] (**Optional)**

- In the process of validation by Industry through various training provider & stake holders

Summary of other evidence (if used): NA

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Horizontal and vertical mobility options have been articulated.

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

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