



Dow Institute of Medical Technology (DIMT)



ADMISSIONS in Medical Technology (IMT)

Session 2024-2025

Prospectus

Email: admissions@duhs.edu.pk
visit website: www.duhs.edu.pk





Message by Vice Chancellor



Prof. Dr. Mohammad Saeed Quraishy
Vice Chancellor
Dow University of Health Sciences

I am glad to write this message. Dow University of Health Sciences was established in 2004, with the Vision to provide quality education in order to produce leaders in the delivery of healthcare, health education and healthcare delivery, by imparting knowledge through excellence in research and education. Its ultimate aim is to develop strategies to cater to cost effective and quality community health services.

Taking charge of a University is a unique opportunity. There is a great responsibility of assuring quality education and service delivery at all levels of the institution. This is only possible with the help of a dedicated team of directors, faculty members, and the supporting staff of the constituent departments and institutes. By the Grace of God, Dow University of Health Sciences has emerged as the fastest growing institution offering quality medical education in all of South Asia. It is the result of the dedicated team efforts that Dow University is ranked ahead of many regional medical institutions.

Dow University of Health Sciences has also made an impact national and international levels, especially through its graduates who have gone on to achieve progress and prosperity globally. The alumni of this University have proven to be successful, resourceful, and philanthropic individuals who have contributed their time, efforts and resources to make a significant impact on their society.

We aim to create an environment that fosters physical, emotional, and psychological wellness, and look to advance healthy lifestyles. By constantly measuring our deliverables, we have succeeded in creating an infrastructure of state-of-the-art equipment and technology that meets the need of the future, and provides superior healthcare delivery systems today.

I am optimistic that graduates of Allied Health Sciences program will bring honor to DUHS by strengthening the concept of knowledge-based economy in Pakistan through their innovations, scientific and entrepreneur skills.



Prof. Dr. Muhammad Sameer Qureshi

*MBBS, Ph.D (UK)
Principal (DIMIT)*

Message from the Principal *Dow Institute of Medical Technology*

With the blessings of Almighty Allah, Dow Institute of Medical Technology is dedicated to provide academic and technical education and produce highly skilled and motivated graduates since its inception in 2006.

The vision is to be a center of excellence to impart education, skilled based learning and research for allied health sciences. This Institute is offering BS medical Technology program of four years in five major disciplines namely; Clinical laboratory Sciences, Clinical Ophthalmic Technology, Perfusion Sciences, Respiratory and Critical care and surgical technology

Medical Technologists graduated from Dow Institute of medical Technology are educated and trained to impart their skills as a vital part of technical aspects in Allied Health care systems. The Alumni graduated from this Institute are serving by contributing to the development and application of latest technology to improve patient care not only at National but also at International level. Lastly, I would emphasize that Dow Institute of Medical Technology is dedicated to produce Medical technologists, educated and trained to cope up with state-of-the-art advanced technology in Allied health Sciences with a promising scope in career.



VISION OF IMT

To become a Center of excellence in education through research and technical skills in the field of medical technology

MISSION OF IMT

To provide updated and advanced knowledge to our graduates in the field of Medical technology through learning ,training and practical skills along with critical thinking in multidisciplinary program for the betterment of community.



OVERVIEW

The term ‘Allied health Sciences’ was popularized during the deliberations that led to the inception of the Allied Health Professions Personnel Training Act in 1967. The passage of this legislation brought about a new and radical concept of unifying all the various disciplines that comprise allied health into academic units with a single administration.’’ (Association of Schools of Allied Professionals website www.duhs.edu.pk)

The definition may vary across countries and context, but generally it is considered distinct from Nursing, Medicine and Pharmacy. The Center for Health Profession, California reported that 60 percent of the total health work force comprises of Allied Health Professionals. In Pakistan Allied Health Professionals is also known as Medical Technology that is a vital part of the entire Health Care System. This professional field comprises the challenges and rewards of medicine and surgery, and deals with technical aspect of the same.

INSTITUTE OF MEDICAL TECHNOLOGY

Vision of the Chancellor to develop human resources in Allied Health disciplines transformed into reality in April 2005 with the inception of Dow Institute of Medical Technology (DIMIT) in 2006 under the auspicious and dynamic guidance of Late Dr. Syed Sarwat Hassan. The Institute is one of its kinds where Bachelor of Science in four different technologies namely: Clinical Laboratory Sciences, Respiratory and Critical Care Technology, Surgical Technology and Clinical Ophthalmology Technology were started simultaneously. Later on programs for Occupational Therapy, Dental Hygiene and Dental Care Professional were introduced; which was followed by B.S program in Perfusion Sciences. The later three are being offered by their respective Institutes whereas, Perfusion Sciences along with the previous four is still being offered by Institute of Medical Technology.



ABOUT THE PROGRAM

The program focuses on the development of scholarly activities designed to develop and advance competencies in clinical skills, critical thinking, and evidence-based practices. Maintenance and practice of ethical standards as well as development of collaborative perspective toward education and proper management and persistent goal-oriented efforts, are also integral part of the program. The medical technology program at DUHS offers 4-year Bachelor of Sciences degree. During the first two years the program comprises of courses in basic medical sciences, communication skills, general education and concerned technical sciences. This is followed by courses in advanced clinical sciences, clinical practices and technical skills. Throughout the program the students are placed in various clinical settings to not only apply the knowledge acquired but also to polish their technical skills. Research is also an integral part of the curriculum and courses in Research Methodology and Biostatistics followed by undergraduate research projects is a prerequisite for the successful completion of the program. Upon successful completion of bachelor's program DUHS offers six months of paid internship in the approved affiliated clinical sites.

Programs are offered in five different technologies:

- o Clinical Laboratory Sciences
- o Respiratory & Critical Care Technology
- o Surgical Technology
- o Clinical Ophthalmology Technology
- o Perfusion Sciences



2.0. NUMBER OF SEATS:

Programs are offered in five different technologies:

1. Clinical Laboratory Sciences 25 Seats
2. Respiratory & Critical Care Technology 25 Seats
3. Surgical Technology 25 Seats
4. Clinical Ophthalmology Technology 25 Seats
5. Perfusion Sciences 25 Seats

RECOGNITION BY THE ALLIED HEALTH PROFESSIONAL COUNCIL OF PAKISTAN

Dow Institute of Medical Technology is registered with the allied health regulatory council that is Allied Health Professional Council of Pakistan (AHPC). Our students are actively obtaining licenses for practice from AHPC.

Fee Structure of BSMT

Session 2024-25

Fee Type	Fee Amount
Admission Fee	45,000
Tuition Fee	150,000
Transportation Fee (Optional)	43,000
Documentation Verification Fee (Once Only)	2,500
Library Fee (Yearly)	10,000
Student Activity Charges (Yearly)	10,000
Total with Transport	260,500
Total without Transport	217,500

RULES FOR THE PAYMENT OF FEE

1. Fees of succeeding years (2nd Year to Final Year) are to be paid within ONE MONTH of issuance of fee vouchers or within the due date provided.
2. In case the fee for succeeding year (2nd Year to Final Year) is not submitted during the given specified time, late payment charges will be charged as follows:

First Month (After Lapse of First Month)	2.5%
Second Month	5%
Third Month	7.5%
Fourth Month	10%

After four months of non-payment, the seat is liable to be cancelled and student will not be allowed to appear in any examination

3. Fee of all categories shall be increased by 10% every year.
4. Fee deposited is refundable as per the Refund Policy guidelines of the DUHS.
5. Taxes will be applied as per the FBR and Government rules.
6. Hostel and Transport fee will be valid till the December of every year.
7. Amounts stated in the fee vouchers are excluded of all Bank charges .
8. The Fee Structure may be revised by the university at any time during the course of the study, due to unavoidable circumstances.
9. Associated fees will be charged as per fee structure.



CURRICULUM
COMPULSORY / BASIC SUBJECTS

Serial No	Course Name	Codes
1.	CHEMISTRY/ PHYSICS	NS-CHEM 201/ NS-PHYS 201
2.	BIOLOGY/ MATHEMATICS	NS-BIOL 202/NS-MATH 202
3.	PSYCHOLOGY	SC-PSY 102
4.	SOCIOLOGY	SC-SOC 103
5.	COMPUTER SKILLS	QR-CS 201
6.	BIOSTATISTICS	QR-BSTAT 203
7.	HISTORY	AH-HIS 102
8.	LANGUAGES	AH-LA-G 103/AH-LA-C 103/AH-LA-A 103
9.	ISLAMIAT/ETHICS	CC-ISL 201/CC-ETHIC 201
10.	PAKISTAN STUDIES	CC-PST 202
11.	ENGLISH FOUNDATION	GC-EN-F 101
12.	ENGLISH ADVANCE	GC-EN-A 202
13.	EXPOSITORY WRITING	GC-EN-E 303
14.	PHYSIOLOGY	BS-PIO 201
15.	ANATOMY	BS-ANAT 201
16.	BIOCHEMISTRY	BS-BCHEM 202
17.	MICROBIOLOGY AND INFECTION CONTROL	BS-MICRO 203
18.	PHARMACOLOGY	BS-PHARM 204
19.	RESEARCH METHODS AND PRINCIPLES	BS-RMP 305
20.	RESEARCH PROJECT	BS-RP 408



CURRICULUM
SURGICAL TECHNOLOGY

Serial No	Course Name	Course Code
1.	INTRODUCTION TO SURGICAL TECHNOLOGY	ST-INTRO 203
2.	OPERATING ROOM MANAGEMENT	ST-ORM 304
3.	SURGICAL INSTRUMENTS	ST-INS 305
4.	SURGICAL ANATOMY-I	ST-ANAT 314
5.	SURGICAL PHYSIOLOGY	ST-PIO 304
6.	SURGICAL TERMINOLOGY	ST-TERM 304
7.	SURGICAL TECHNOLOGY-CLINICAL PRACTICUM I	ST-CP 414
8.	APPLIED GENERAL SURGICAL PATHOPHYSIOLOGY-I	ST-PATH 315
9.	OPERATING ROOM PHYSICS	ST-PHYS 305
10.	PRE & POST-OPERATIVE MANAGEMENT	ST-PPMAN 305
11.	ASEPTIC TECHNIQUE AND INFECTION CONTROL	ST-ASTIC 306
12.	SURGICAL TECHNOLOGY-CLINICAL PRACTICUM II	ST- CP 425
13.	OR-PROCEDURE-I	ST-PROCD 316
14.	SURGICAL ANATOMY-II	ST-ANAT 326
15.	WOUND MANAGEMENT	ST-WONM306
16.	APPLIED GENERAL SURGICAL PATHOPHYSIOLOGY-II	ST- PATH 326
17.	SURGICAL TECHNOLOGY-CLINICAL PRACTICUM III	ST- CP 436
18.	OR-PROCEDURE-II	ST-PROCD 327
19.	SURGICAL PHARMACOLOGY AND ANESTHESIA	ST-PHARM 307
20.	CLINICAL DIAGNOSTICS IN SURGERY	ST-DIAG 307
21.	ARTIFICIAL INTELLIGENCE AND ROBOTICS IN SURGERY	ST-AIRS 207
22.	SURGICAL TECHNOLOGY-CLINICAL PRACTICUM IV	ST- CP 447
23.	OR PROCEDURES III	ST-PROCD 338
24.	STEREOTACTIC RADIOSURGERY	ST-SRS 208
25.	SURGICAL TECHNOLOGY-CLINICAL PRACTICUM V	ST- CP 458
26.	SURGICAL TECHNOLOGY-CLINICAL PRACTICUM VI	ST- CP 468



CURRICULUM

RESPIRATORY AND CRITICAL CARE TECHNOLOGY

Serial No	Course Name	Course Code
1.	INTRODUCTION TO CRITICAL CARE -I	RCC-ICC 213
2.	CARDIOPULMONARY PHYSIOLOGY	RCC-CPP 204
3.	INTRODUCTION TO CRITICAL CARE-II	RCC-ICC 324
4.	RESPIRATORY AND CRITICAL CARE MEDICAL TERMINOLOGY	RCC-RCCMT 204
5.	DIAGNOSTICS IN CRITICAL CARE-I	RCC-DCC 314
6.	APPLIED CARDIOPULMONARY PATHOPHYSIOLOGY -I	RCC-ACPP 215
7.	DIAGNOSTICS IN CRITICAL CARE-II	RCC-DCC 425
8.	INVASIVE AND NON-INVASIVE MECHANICAL VENTILATION-I	RCC-MV 315
9.	RESPIRATORY AND CRITICAL CARE TECHNOLOGY CLINICAL PRACTICUM-I	RCC-CP 415
10.	APPLIED CARDIOPULMONARY PATHOPHYSIOLOGY-II	RCC-ACPP 326
11.	INVASIVE AND NON-INVASIVE MECHANICAL VENTILATION-II	RCC-MV 426
12.	PHYSICAL PRINCIPLES AND TECHNIQUES IN RESPIRATORY AND CRITICAL CARE	RCC-PPTRC 306
13.	PROCEDURES AND THERAPEUTIC INTERVENTION I	RCC-PTI 316
14.	DRUG THERAPY IN CRITICAL CARE	RCC-DTCC 306
15.	NEONATAL AND PEDIATRIC RESPIRATORY CARE	RCC-NPRC 307
16.	PROCEDURES AND THERAPEUTIC INTERVENTION II	RCC-PTI 427
17.	CARDIOPULMONARY REHABILITATION	RCC-CPR 307
18.	RESPIRATORY AND CRITICAL CARE TECHNOLOGY CLINICAL PRACTICUM-II	RCC-CP 427
19.	ADVANCED RESPIRATORY AND CRITICAL CARE	RCC-ARCC 408
20.	HEALTH AND HOSPITAL MANAGEMENT	RCC-HHM 308
21.	RESPIRATORY AND CRITICAL CARE TECHNOLOGY CLINICAL PRACTICUM-III	RCC-CP 438



CURRICULUM

CLINICAL OPHTHALMIC TECHNOLOGY

Serial No	Course Name	Course Code
1.	FUNDAMENTALS OF OPHTHALMIC TECHNOLOGY	OP-FOP 203
2.	OCULAR MEDICAL TERMINOLOGY AND PROCEDURE NAMES	OP-OCT 204
3.	OCULAR ANATOMY AND PHYSIOLOGY-I	OP-OAP 214
4.	COMMUNITY EYE CARE-I	OP-CEC 214
5.	DIAGNOSIS AND MANAGEMENT OF COMMON EYE DISORDERS-I	OP-CED 214
6.	OPHTHALMIC PHARMACOLOGY	OP-PHARM 305
7.	ADVANCE REFRACTION TECHNIQUES	OP-ART 305
8.	DISPENSING OPTICS AND CONTACT LENSES-I	OP-OCL 215
9.	CLINICAL OPHTHALMIC TECHNOLOGY- CLINICAL PRACTICUM I	OP-CP 415
10.	ADVANCE COMMUNITY EYE CARE-II	OP-CEC 326
11.	DIAGNOSIS AND MANAGEMENT OF COMMON EYE DISORDERS-II	OP-CED 326
12.	OCULAR PHYSIOLOGY-II	OP-OPH-326
13.	BASIC AND ADVANCE VISUAL FUNCTION	OP-VF 306
14.	CLINICAL OPTICS AND CONTACT LENSES-II	OP-OCL 326
15.	CLINICAL OPHTHALMIC TECHNOLOGY- CLINICAL PRACTICUM II	OP-CP 426
16.	DIAGNOSIS AND MANAGEMENT OF COMMON EYE DISORDERS-III	OP-CED 437
17.	BINOCULAR SINGLE VISION AND ITS CLINICAL APPLICATION	OP-BSV 307
18.	CLINICAL OPHTHALMIC TECHNOLOGY- CLINICAL PRACTICUM III	OP-CP 437
19.	HEALTH AND EYE CARE MANAGEMENT	OP-ECM 408
20.	CLINICAL OPHTHALMIC TECHNOLOGY- CLINICAL PRACTICUM IV	OP-CP 448



**CURRICULUM
PERFUSION SCIENCES**

Serial No	Course Name	Course Code
1.	INTRODUCTION TO PERFUSION TECHNOLOGY	PS-INTRO 203
2.	CARDIOVASCULAR ANATOMY	PS-CVA 304
3.	CARDIOVASCULAR PHYSIOLOGY	PS-CVP 304
4.	PERFUSION MODULE	PS-PM 404
5.	OPERATION ROOM STANDARDS	PS-ORS 204
6.	DIAGNOSTIC TECHNIQUES IN PERFUSION SCIENCES	PS-DIAG 305
7.	PATHOPHYSIOLOGY & SURGICAL REPAIR - I	PS-PSR 316
8.	PERFUSION HEMATOLOGY	PS-HEM 305
9.	SPECIAL EQUIPMENT IN PERFUSION SCIENCES	PS-SEP 406
10.	PERFUSION PHARMACOLOGY	PS-PHARM 305
11.	MONITORING OF CARDIOPULMONARY BYPASS	PS-MCPB 406
12.	BLOOD CONSERVATION IN PERFUSION	PS-BCP 406
13.	PEDIATRIC CARDIOPULMONARY BYPASS	PS-PCPB 407
14.	PATHOPHYSIOLOGY & SURGICAL REPAIR – II	PS-PSR 427
15.	EXTRACORPOREAL MEMBRANE OXYGENATION	PS-ECMO 407
16.	NON CARDIAC SURGICAL APPLICATION	PS-NCSA 407
17.	HEALTH CARE MANAGEMENT	PS-HCM 308
18.	ANESTHESIA MANAGEMENT IN CARDIOPULMONARY BYPASS	PS-ANCPB 408
19.	PERFUSION SCIENCES CLINICAL PRACTICUM I	PS-CP 414
20.	PERFUSION SCIENCES CLINICAL PRACTICUM II	PS-CP 425
21.	PERFUSION SCIENCES CLINICAL PRACTICUM III	PS-CP 436
22.	PERFUSION SCIENCES CLINICAL PRACTICUM IV	PS-CP 447
23.	PERFUSION SCIENCES CLINICAL PRACTICUM V	PS-CP 458



CURRICULUM
CLINICAL LABORATORY SCIENCES

Serial No	Course Name	Course Code
1.	INTRODUCTION TO CLINICAL LABORATORY SCIENCES	CLS-INTRO 203
2.	HISTOPATHOLOGY I	CLS-HISTO 314
3.	HEMATOLOGY I	CLS-HEM 314
4.	LABORATORY MATHEMATICS	CLS-LMATH 304
5.	CLINICAL CHEMISTRY I	CLS-CCHEM 314
6.	CLINICAL LABORATORY SCIENCES- CLINICAL PRACTICUM I	CLS-CP 414
7.	QUALITY ASSURANCE AND CONTROL	CLS-QAC 305
8.	HEMATOLOGY II	CLS-HEM 425
9.	IMMUNOLOGY AND SEROLOGY	CLS-IMS 305
10.	MOLECULAR BIOLOGY AND TECHNIQUES I	CLS-MBT 315
11.	CLINICAL LABORATORY SCIENCES- CLINICAL PRACTICUM II	CLS-CP 425
12.	DIAGNOSTIC MICROBIOLOGY I	CLS-DM 316
13.	TRANSFUSION MEDICINE	CLS-TM 407
14.	CLINICAL CHEMISTRY II	CLS-CCHEM 426
15.	BODY FLUID ANALYSIS	CLS-BFA 406
16.	HISTOPATHOLOGY II	CLS-HISTO 426
17.	CLINICAL LABORATORY SCIENCES- CLINICAL PRACTICUM III	CLS-CP 436
18.	DIAGNOSTIC MICROBIOLOGY II	CLS-DM 427
19.	MOLECULAR BIOLOGY AND TECHNIQUES II	CLS-MBT 427
20.	BIOINFORMATICS	CLS-BINF 207
21.	CLINICAL LABORATORY SCIENCES- CLINICAL PRACTICUM IV	CLS-CP 447
22.	LABORATORY MANAGEMENT	CLS-LM 208
23.	CLINICAL LABORATORY SCIENCES- CLINICAL PRACTICUM V	CLS-CP 458



GRADE/GPA REQUIREMENT FOR EACH SEMESTER & GRADUATION

All courses are continuously assessed during the semester through quiz, assignment, Oral Presentation, Midterm Examination, Post Viva Rotation and Final Examination. Grading is absolute, not relative grading. Percentages are converted in GPA and their respective grades as follows;

GRADE	PERCENTAGE	GPA
A+	80% to 100 %	4.0
A	75%to 79 %	4.0
A-	70%to 74 %	3.7
B+	67%to 69 %	3.3
B	60%to 66 %	3.0
C+	56%to 59 %	2.9
C	50%to 55 %	2.0
F	(< 50 %) Fail ..below	2.00

Fractional Grade Point Average will be calculated according to approved rules



ASSESSMENT METHODS

EXAMS EVALUATION	
Terminal Examination – BCQ's	70%
Mid Term Examination – BCQ/MCQ	15%
INTERNAL EVALUATION (<i>VivaVoce, Presentation, Assignment, Quizzes, Workshops, Attendance</i>)	15%
CLINICAL PRACTICUM / ROTATIONS	
EXAMS EVALUATION (<i>conducted by HODs of respective departments</i>) VIVA/ SHORT QUESTIONS	60%
INTERNAL EVALUATION (<i>Structured VIVA by internal faculty of DIMT</i>)	40%

ASSESSMENT METHODS (For Online Teaching)

EXAMS EVALUATION	
Terminal Examination – BCQ's	40%
Mid Term Examination – BCQ/MCQ	20%
INTERNAL EVALUATION (<i>VivaVoce, Presentation, Assignment, Quizzes, Workshops, Attendance</i>)	40%
CLINICAL PRACTICUM / ROTATIONS	
EXAMS EVALUATION <i>PROJECTS/PRESENTATIONS/DEMONSTRATIONS/VIVA/VIDEO PRESENTATIONS/CASE STUDIES</i>	100%



FACILITIES

SKILL'S LAB

The state of art skill's lab is established at the Institute of Medical Technology with latest and sophisticated models and full line of medical equipment under supervision of experienced medical technologist.

Before clinical training at affiliated hospitals every student receives extensive hands on training in relevant skills in the skill's lab under supervision of faculty. Respiratory & Critical care technology students are trained at Professional DC skills lab.

COMPUTER LAB

The Computer lab with 45 latest systems is fully operational. The computer lab offers following facilities.

- i. Computer Courses: Interactive lectures on basic computer skills such as MS- Word, Excel, PowerPoint, MS- Outlook express.*
- ii. Internet Facility: We give our students better chance to browse Medical Information, Current Updates, Research Articles or Concerned Topics.*
- iii. Hands-on Training: Students are given opportunity to apply their skills and thereby receive hands-on training and learn extensively to the best of their ability.*
- iv. Multimedia: Presentations and lectures are delivered through latest audiovisual aid.*
- v. Internet Training: Internet training is being given to the students in terms of sharing documents, protecting them online, difference between Intranet and Internet etc.*



EXTRA-CURRICULAR ACTIVITIES

Annual Sports Week, Annual DIMT Picnic, Poster Competition, DUHS Independence Day Celebration, initiated Flood Relief Camp, DUHS-DICE Exhibition, Community Services, Green Drive and plantation.

DEPARTMENTAL HIGHLIGHTS



A Virtual tour to Robotic Surgery for surgical technologists



A workshop on Intra venous and Intramuscular injections for pharmacy students organized by faculty of surgical technology



One of IMT's graduate project shortlisted as top 3rd for HULT Prize, UK.



An awareness session on smoking and its effects on health organized by faculty of Respiratory and Critical Care Technology at Bahria University

Perfusion Week, 16th May, 2023



The most celebrated Food and Fun Festival of 2024 organized by faculty Entrepreneurship Ms. Kamila Maryam and 2nd year students of Dow Institute of Medical Technology received overwhelming response from the public.



FUTURE PROSPECTS

CLINICAL LABORATORY SCIENCES

Clinical laboratory technologists seek their career opportunities in clinical laboratories at hospitals; doctor's /physician's offices, reference and private laboratories Clinical Laboratory Technologists are an integral part of Clinical and Research laboratories.

SURGICAL TECHNOLOGY

A Surgical Technologist is expected to always anticipate the needs of the supervising surgeon and to provide quality patient care with a special focus on safety and efficiency. With advancing experience they can specialize in progressively more demanding, and more difficult medical specialties e.g. neurosurgery, orthopedic and cardiac surgery and furthermore; they can specialize to become surgical first assistant or circulating surgical technologists. According to the Bureau of Labor Statistics, the circulator helps interview the patient before and after surgery and may also assist with anesthesia. Professional scope includes: Outpatient clinics (for physicians and dentists), Ambulatory surgical centers (places that perform same/day care surgeries), Special mobile surgical teams and Private physician practices, surgical marketing units, research and development industries. Employment opportunities for surgical technologists can include: Hospitals, private clinics, R&D Institutions, Surgical Marketing Units, Post graduate Institutions, Managerial roles.

RESPIRATORY AND CRITICAL CARE TECHNOLOGY

Although Respiratory and Critical Care Technologists practice under the supervision of a physician, they are required to exercise considerable independent judgment in providing respiratory therapy to patients. They can advance the practice of respiratory therapy by doing research and creating clinical practice guidelines.

About 75% of respiratory therapists are employed in acute care Units in hospitals (ICU, ER, OR, Neonatal nurseries and general wards) and some of them find employment in diagnostic laboratories, sleep disorder centers, rehabilitation, long-term acute care and skilled nursing facilities, patients' homes, patient transport systems, physician offices, convalescent and



retirement centers, educational institutions and wellness centers. They can fill managerial and administrative positions and work in different types of jobs in private industries such as sales, service and clinical support.

OPHTHALMIC TECHNOLOGIST

Ophthalmic medical technologists can pursue their careers in a variety of supervised clinical settings such as private offices of Ophthalmologists, group practices, hospital specialty clinics and university clinics. Since, they are highly-skilled technical personnel in the field; many can assume supervisory roles and teach other members of the allied health team. With additional training, an ophthalmic technologist may become an orthoptist specializing in the evaluation of patients with Squints and related muscle imbalances of the eye. Some individuals continue their education to become, ophthalmologists, or other high paying career.

PERFUSIONISTS

Perfusionists usually work in hospitals affiliated with large medical centers and as a chief perfusionist generally directs a perfusion team. Additional scope of practice includes blood conservation, long term support for respiratory failure, and isolated limb perfusion for the treatment of malignant tumors.

Allied health professionals are usually at the forefront of research and innovations so that patients are continually receiving the very best healthcare. For example, in clinical perfusion sciences, staff could be investigating how less invasive surgical procedures of the heart impact on their work, or analyzing how their practices should differ when open heart surgery is performed on children rather than adult patients. Therefore, they may also work in educational institutions as teachers or researchers.



RESEARCH AND DEVELOPMENT AT DOW INSTITUTE OF MEDICAL TECHNOLOGY

Dow Institute of Medical Technology holds the honor to publish scientific work nationally and internationally. Here are some most recent scientific publications (2021-2024) from the faculty of Dow Institute of Medical Technology:

1. Ahmed S, Aftab MF, Ahmed N, Yusuf IM, Qureshi MS. Restoration of C-type natriuretic peptide and glial fibrillary acidic protein expression in fear centers and intrinsic cardiac ganglia by theta frequency sound during chronic stress in mice. *Journal of Neurorestoratology*. 2024/06/12/2024:100133. doi:<https://doi.org/10.1016/j.jnrt.2024.100133>
2. Faisal, A., Waqar, M., Fatima, T., Aftab, M. F., & Khan, M. A. (2024). Effect of three months high-intensity anaerobic treadmill-based exercise on intuitive decision-making capability: A prospective cohort study. *Journal of Human Sport and Exercise*, 19(3), 815-826. <https://doi.org/10.55860/6fm4sk70>
3. Majeed U, Aftab MF, Baloch DM, Ahmed S, Yusuf IM, Hasan MA, Qureshi MS. Modulation of Heart and Brain Function by Surah Al-Rehman Recitation Among Distressed Diabetic Patients in Pakistan. *J Relig Health*. 2022 Oct;61(5):3852-3865. doi: 10.1007/s10943-021-01431-2. Epub 2021 Sep 23. PMID: 34554380.
4. Muhammad, Nizamuddin & Hussain, Mehwish & Adnan, Syed. (2021). Screen time and Sleep Quality among College and University Students of Karachi. *Journal of Health & Biological Sciences*. 9. 1. 10.12662/2317-3076jhbs.v9i1.3214.p1-14.2021.
5. Noor R, Shahid F, Hydrie MZ, Imran M, Shah SH. Factors influencing birth preparedness and complication readiness among childbearing age women in Thatta district, Sindh. *PloS one*. 2022 Sep 29;17(9):e0275243.\
6. Talat Roome, Maha Qasim, Sabahat Aziz, Ahsana Dar Farooq, Anam Razzak, Syed Farooq Ali, . Assessment of acute, sub-acute, chronic and genotoxicity of polyherbal formulation DCD-684 in mice. *Pak. J. Pharm. Sci., Vol.34, No.4 (Suppl), July 2021, pp.1485-1498*
7. Talat Roome, Maha Qasim, Ahsana Dar Farooq, Qibtiya Ilyas, Sabahat Aziz, Syed Farooq Ali. Antispasmodic activity and mechanism of action of polyherbal formulation DCD-684 on rabbit jejunum *Pak. J. Pharm. Sci., Vol. 34, No.2 (Suppl), March 2021, pp.711-722*
8. Hanif F, Washdev W, Bilwani F, Simjee SU, Haque Z. A Novel Variant in Dopamine Receptor Type 2 Gene is Associated with Schizophrenia. *Archives of Medical Research*. 2021 Apr 1;52(3):348-53.



9. Javed L, Hanif F, Malhi SM, Zaman U, Jahan N, Amir Q, Javed A, Malik AB, Abrar H. Diclofenac sodium enhances the antiepileptic effect of levetiracetam in pilocarpine induced epileptic mice model. *Pakistan Journal of Pharmaceutical Sciences*. 2021 Sep 2;34.
10. Arzoo, A., & Ali, S. (2022). Prevalence of stress, anxiety, depression, and job dissatisfaction in health care professional dealing with covid-19 patients. *Annals of Psychophysiology*, 9(1), 28-38. <https://doi.org/10.29052/2412-3188.v9.i1.2022.28-38>
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DOW UNIVERSITY OF HEALTH SCIENCES

Baba-e-Urdu Road, Off M.A. Jinnah Road, Karachi.
Tel: 021-32732194 email: admissions@duhs.edu.pk
visit website: www.duhs.edu.pk