

Ph.D. in Clinical Translational Sciences

Sample Curriculum for Phoenix Students:

Required Courses *

- Principles:
 - **Cellular, Molecular and Cancer Biology (CTS 555A)** – 6 units, Fall semester; OR
 - **Fundamentals of Clinical Translational Science (CTS 500)** – 4 units, Spring semester; OR
 - **Principles of Clinical Research I and II (CTS 502 and CTS 503)** - 4 units each), Fall/Spring; OR
 - **Principles of Surgery or Principles of Medicine (CTS 610 or CTS 620A/B/C)** – 3-6 units, any semester [for postgraduate students]
- Professional Development Series - minimum 4 units chosen from:
 - **Responsible Conduct of Research (CTS 595C)** – 1 unit/semester; taken Fall and Spring semesters [required]And an additional 2 units chosen from:
 - **Individualized Scientific Writing (CTS 585)** – 2 units, any semester; OR
 - **Professional & Career Training Series (CTS 595D)** – 2 units, Fall semester;
 - Or similar courses in other departments with CTS approval.
- Biostatistics:
 - **Biostatistics in Public Health (BIOS 576A)** – 3 units [offered fully online/asynchronous in Spring semester].
- Seminar and/or journal club/colloquium – 4 units total (1 unit per enrollment; 4 total enrollments).
 - Seminar options available to Phoenix students include **Medical Sciences Seminar (CTS 696A)**, **Biomedical Sciences Seminar (CTS 696B)**, or **Neuroscience Research in Progress (CTS 696N)**. *Postgraduate students may earn credit in CTS 696A for attendance at relevant grand rounds series in a clinical department.***
 - The journal club/colloquium course available to Phoenix students is **Biomedical Sciences Journal Colloquium (CTS 595)**. Topic-specific sections of CTS 595 are offered as available in either Fall or Spring semester. *Postgraduate students may earn credit in CTS 595 for participation in clinical case conferences or a clinical department journal club.***
 - Any seminar or journal club/colloquium course offered by another graduate program based in Tucson if available for remote enrollment.
- **Dissertation (CTS 920)** – 18 units total; available any semester for 1-9 units by request to CTS.

* May substitute other courses with CTS approval with the exception of CTS 920.

** Seminar or journal club credit for activities other than CTS courses toward Ph.D. requires prior approval from CTS.

Sample Elective Options (NOT a comprehensive list – any relevant graduate courses may be used as electives.)

- Introduction to Bioinformatics (CTS 505) – 3 units [offered Fall semester]
- Basic Concepts and Translational Applications in Radiation Biology – 2 units [offered Spring semester]
- Informatics for Clinical Research (CTS 503) – 4 units [offered in Spring semester]
- Neurodevelopment in Action (CTS 572) – 4 units [offered in Spring semester]
- Human Molecular Genetics Basics (CMM 503) – 1 unit [offered online in Fall and Spring semester]

- Basic Principles of Epidemiology (EPID 573A) – 3 units [offered online in Fall and Spring semester]
- Inflammation and Immune Pathology (CMM 550) – 1 unit [offered online in Spring semester]
- Immunology Basics (CMM 537) – 1 unit [offered online in Spring semester]
- Biostatistics for Research (BIOS 576B) – 3 units [offered online in Spring semester]
- Bioinformatics and Functional Genomic Analysis (MCB 516A) – 3 units [offered Spring semester with remote enrollment for Phoenix students]
- **Or** any other graduate courses recommended by the faculty mentor.