## 3.6.2

## Educational Programs: Graduate/Post-Baccalaureate:Graduate curriculum

The institution structures its graduate curricula (1) to include knowledge of the literature of the discipline and (2) to ensure ongoing student engagement in research and/or appropriate professional practice and training experiences.

## Judgment

☑ Compliance ☐ Partial Compliance ☐ Non-Compliance ☐ Not Applicable

## Narrative

Tennessee Technological University (TTU) is a member of the Council of Graduate Schools (CGS). CGS is the only national organization in the United States that is dedicated solely to the advancement of graduate education and research. CGS accomplishes its mission through advocacy in the policy arena, innovative research, and the development and dissemination of best practices. As a member of CGS, TTU benefits by implementing graduate education best practices for program planning and student engagement in research. Graduate curricula are structured to include knowledge of the discipline and to ensure ongoing student engagement in research and/or appropriate professional practice and training experiences.

University faculty members follow policies and procedures established by the Graduate College to ensure that their graduate students have effective programs of study that contain the necessary knowledge and skills needed to demonstrate a mastery of their respective fields and to become experts in their disciplines. Research is conducted in each college of the University, including the Centers of Excellence, and there are numerous opportunities for student involvement either directly on contracts and grants or on graduate research assistantships. The University maintains an Office of Research and Economic Development, which assists in the procurement of funds to support research [1].

**Graduate Curriculum**

Graduate students gain knowledge through their coursework, faculty mentors, analysis of scholarly publications, and hands-on research activities. TTU has a myriad of resources available to provide support to each individual graduate program. Resources include the following key areas: the databases and scholarly research accessible through the Volpe Library; academic, computer, and laboratory facilities; and human resources (faculty and staff).

The collections, services and environments available through the online and on-ground Volpe Library lead to intellectual discovery. Graduate students access electronic resources and databases through the online library portal that is available 24/7 to all graduate students. The University has a commitment to maintain a high-quality collection of research knowledge that is easily accessible by the graduate student community [2].

Graduate students are provided opportunities to increase their knowledge through instruction in the various disciplines and mentoring by qualified graduate faculty. Graduate courses are taught by faculty who are members of the graduate faculty and have the academic credentials and experience necessary to foster student learning and preparation for a profession or field of study (See Comprehensive Standard 3.6.3). In addition, TTU is committed to providing state-of-the-art facilities for computing and research activities conducted by graduate students.

Graduate curriculum is developed in the department by faculty scholars and then approved by the college curriculum committee and college graduate committee. Course content stays up-to-date and relevant because it is developed from the TTU research community of experts. Developing courses and degree requirements at the college level ensures students understand current literature in the discipline and have opportunities to engage in research and scholarship. Once a department has developed a course and received approval from the college curriculum and college graduate committees, the curriculum goes to the Graduate Studies Executive Committee (GSEC) for review and approval. Once approved by the GSEC it is sent to the University Academic Council for approval and then is forwarded to TBR. TTU Policy 224 Approval of Academic Programs, Units, and Modifications is available on the Policy Central website [3]. The details of the procedures are available at the Provost's Office website [4].

**Student Engagement in Research and/or Practice**

Students admitted to a graduate degree program must submit a proposed program of study approved by their advisory committee before completion of 15 hours of graduate credit [5]. The graduate advisory committee oversees the student's program of study, research plan, and comprehensive examinations. This individualized program of study fosters student engagement because the student plays an active role in determining which courses match his or her areas of interest. In addition, students work with a committee of scholars to develop a personalized research or project plan. Graduate degrees are awarded not only on the basis of completion of specific courses, but also on the basis of evidence of proficiency, scholarship, reasoning, and investigation, as well as high attainments in the field of specialization.

Independent learning is reflected in the culminating experiences required in every graduate degree program at TTU. These experiences are designed to meet research literacy and writing requirements for a graduate degree. A thesis or dissertation may be required and will consist of a hypothesis tested, a methodology for inquiry, presentation of observations and results, a discussion of the results, and conclusions based on project observations. A thesis or dissertation may include articles submitted, or about to be submitted, to professional journals. Each semester the College of Graduate Studies provides training on thesis and dissertation requirements and provides instruction on construction and publishing of the research material.

In addition to producing scholarly writing, each candidate must pass a departmental comprehensive examination conducted by the candidate's graduate advisory committee. The exam may be oral, written, or both. The examination is a test of the candidate's ability to integrate the knowledge of the major and related fields, including material in the research literacy paper, research project, paper, thesis/dissertation, or field study report.

Because the Doctor of Philosophy degree is a research degree, students admitted to one these three PhD programs (Engineering, Exceptional Learning, and Environmental Science) must: 1) follow a plan of study and research developed in conjunction with an advisory committee, 2) satisfactorily complete a comprehensive examination, 3) achieve candidacy, and 4) satisfactorily defend a dissertation.

There are two options available to satisfy the requirements for the master's degree at TTU, a thesis option and a non-thesis option. The thesis option requires mastery of knowledge in the field, followed by completion of a research project that leads to a written thesis. Although the maximum number of credits required in any degree program is determined in accordance with the formalized program for each student, a candidate for a master's degree must complete at least 30 semester hours of credit in a program requiring a thesis and at least 33 semester hours in a non-thesis program.

Non-thesis options may be permitted by departments when authorized by the Graduate Studies Executive Committee. Students taking a non-thesis track must complete an additional three credit hours beyond the 30 semester hours required in the thesis option and also must complete a culminating course project. It is a requirement of the Graduate Studies Executive Committee that a non-thesis program that comes before the Graduate Studies Executive Committee for consideration for approval must foster independent learning [6]. Regardless of whether a required clinical or capstone activity is required, all non-thesis students must take a comprehensive final examination, designed to assess comprehensive content knowledge in the discipline, familiarity with research methods and literature, and the ability to synthesize information. An example of this is the non-thesis option of the MA program in English (ENGL 6890: Directed Research-3 credits). Having completed 30 hours of credit at the graduate level, the student will produce a paper of professional length (25-30 pages) and quality, based on independent research guided by an advisory committee that is chaired by the student's primary advisor. Upon completion of the research paper, and following completion of the comprehensive examination, the student will present the paper's main finding in a seminar open to all faculty and students in the department, and will field questions about his or her research. The grade for this course depends on the quality of the research and its presentation in written and oral form. The student's primary advisor is responsible, in consultation with the other committee members, for assigning the final grade.

**Research Component**

Each graduate degree program is structured such that students complete one or more research methodology course(s) as defined on the students program of study. The table below provides research course requirements by degree and major program of study. Graduate research coursework includes content relevant to the individual graduate major. Topics covered in the course(s) include research methodology, theoretical perspectives, literature review requirements, thesis and dissertation requirements as defined by the particular college, and TTU thesis and dissertation policies and submission practices. Each college graduate committee determines the course content and student requirements; for example, the College of Education doctoral program requires the student to complete the first four chapters of the dissertation as part of the Research Seminar course (EDU 7920).

Table 1. Research Course Requirements by Degree and Major Program of Study.

| College | Degree | Major | Research Methods Course(s) |
|---|---|---|---|
| CAS | MS | Biology | BIOL6990: Research and Thesis |
| CAS | MS | Chemistry | CHEM6901: Master's Chemistry Literature Seminar<br>CHEM6911: Chemistry Thesis Seminar<br>CHEM6990: Research and Thesis |
| CAS | MA | English | ENG6000: Introduction to Graduate Studies<br>ENG6990 Research and Thesis |
| CAS | MS | Mathematics | MATH6990 Research and Thesis<br>MATH6991 Research and Independent Study |
| COBA | MBA | International Business | BMGT6950 Business Strategy |
| COEd | PhD | Exceptional Learning | EDU 7300 Research Design<br>EDU7310 Research in Literacy<br>EDU 7320 Single Subject Design<br>EDU 7330 Qualitative Inquiry in Research<br>EDU 7340 Ethnographic Inquiry in Education<br>EDU 7420 Quantitative Inquiry in Education 1<br>EDU 7430 Quantitative Inquiry in Education II<br>EDU 7920 Research Seminar in Education<br>EDUS 7530 STEM Education Research<br>EDU 7900 Research and Dissertation |
| COEd | MA & EdS | C&I | EDPY 6310 Or EDPY 6350 Educational Statistics<br>FOED 6920 or FOED 6980<br>And<br>CUED/ECED/RED/INSL 6990 Research and Thesis |
| COEd | MA & EdS | EDPY | EDPY 6310 or EDPY 7310 Educational Statistics<br>EDPY 6930 Interpreting and Applying Psychological Research<br>FOED 6920 or EDPY 7900 Independent Study<br>EDPY 6990 Research and Thesis |
| COEd | MA | EXPW | EXPW 6510 Research Methods<br>EXPW 6520 Research Proposals<br>EXPW 6990 Research and Thesis |
| COEd | MA & EdS | Instructional Leadership | INSL6530 Data Driven Curriculum, Development, Assessment and Evaluation (MA)<br>INSL7530 Assessment and Evaluation: improvement in Teaching (Ed.S.) |
| COEng | PhD | Engineering | ECE 6910, Introduction to Graduate Research<br>ECE 7980, Directed Study<br>ECE 7990, Research and Dissertation |
| COEng | MS | Chemical | CHE 6920 Chemical Engineering Graduate Seminar<br>CHE 6990 Research and Thesis |
| COEng | MS | Civil | CEE 6910 Graduate Seminars<br>CEE 6990 Research and Thesis |
| COEng | MS | Electrical | ECE 6910 Introduction to Graduate Research<br>ECE 6990 Research and Thesis |
| COEng | MS | Mechanical | ME 6990 Research and Thesis |
| IDS | | ENVS | EVS 7900 Scientific Writing and Grantmanship<br>ENSB or ENSC 7990 Research and Dissertation<br>EVS 7910 Environmental Science Seminar |
| NURS | MSN | Nursing | NURS 6002 Advanced Nursing Research<br>NURS 6990 Scholarly Synthesis/Research |

**Gaining Knowledge in the Discipline through a Review of Literature**

Each graduate degree program is responsible for defining core course requirements to ensure students are connecting coursework, experiential activities, research, and the current literature to their program of study. Core courses (whether research, thesis, or capstone) are designed to link literature reviews and research related to the discipline. The following are example summaries by college that demonstrate the review/use of current literature in core programs within that college.

**College of Engineering.** There are four types of graduate degrees offered within the College of Engineering: PhD in Engineering, MS Thesis; MS Non-thesis, and Professional Science Master's (PSM). The first three degree programs require readings and analysis of readings in the current literature of the discipline as part of their thesis/dissertation work (PhD, MS-Thesis) or required independent study (MS Non-thesis). The PSM curriculum lists a capstone design project, which may be either a guided or a general elective. Specific examples from selected syllabi for required courses for each graduate program that includes review/use of current disciplinary literature include ME 7990 Research & Dissertation; MS Thesis CEE 6990 Research & Thesis; MS Non-thesis ECE 6980; and Directed Study.

**College of Education.** Specific examples from the College of Education that link readings in the literature of the discipline with research include FOED 6920 Educational Research and FOED 6980 Qualitative Research in Education, which include a review of the literature and proposal prospectus; and EXPW 6510, Research Methods, which includes research, measurement, evaluation, and experimental designs. EDU 7010, EDU 7330, and EDU 7340, the qualitative research sequence in the PhD program include reviews of literature in order to craft a research proposal, carry out the research, and analyze the subsequent data to write up a research report. Additionally, EDU 7920 is the course in which students prepare their dissertation proposal which is the first three chapters of their dissertation. Chapter Two is the review of literature which requires an extensive review of literature related to the discipline.

**School of Nursing.** An example of the School of Nursing's core coursework that illustrates the connection of current readings to the profession is NURS 5000 Theoretical Foundations for Advanced Nursing Practice. This course provides the student with the theoretical foundations for advanced nursing. The focus of the course is on the critical components of contemporary nursing knowledge, exploration of the nature of theory development in nursing, examination of relevance of concepts and the literature, evaluation of theories, and relevance of theories to practice.

**College of Arts and Sciences.** The College of Arts and Sciences has a broad M.S. program that offers thesis and non-thesis degree options. Courses that provide an outstanding illustration of the connection to current reading in the literature and research or capstone coursework include Math 6991 Research and Independent Study. Students in the non-thesis MS option are required to take three credit hours of Math 6991 Research and Independent Study. Students in the thesis MS option are required to take six credit hours of Math 6990 Thesis Research. Students conducting thesis research are reading mathematical papers as part of that work. Another illustration is BIOL 6660 Fish Ecology. This course is designed to emphasize alternative interpretations for findings presented in primary literature and applying that knowledge to research design and manuscript preparation. Finally, almost all of the graduate programs in chemistry require students to identify a discipline-specific subject (Inorganic, Analytical, Biochemical, etc.) after which they write a cited paper and/or deliver a presentation as part of their grade for the course. The degree to which that literature is utilized differs from course-to-course. CHEM 6610 Advanced Biochemistry uses content from current scientific literature as the foundation for the course with students accessing peer-reviewed literature databases on a regular basis.

**College of Business Administration.** All but one of the required core courses within the MBA program utilize required literature that was published within the past three years or less. Additionally, multiple courses implement dynamic and interpretive simulations which give real-time feedback to students and make use of current technology and business strategies, allowing for an experiential learning opportunity. The majority of core classes also utilize recent events and articles to supplement course content. Specific examples of from core coursework include: ACCT 6010 – Required text: *Financial & Managerial Accounting for MBAs*, 4th ed. (2015). Additional resources: All students are required to read supplemental articles that are current in subject matter; BMGT 6200 – Required text: *Handbook of Principles of Organizational Behavior*, 2nd ed. (2009). Additional resources: *Change Management Simulation* (2013); BMGT 6950 (Capstone) - Required text: *Strategic Management: Competitiveness & Globalization*, 10th ed. (2012). Additional resources include CapSim (dynamic, competitive simulation, current, comprehensive); DS 6220 – Required text: *Corporate Information Strategy and Management*, 8th ed. (2008 – most recent edition).

Additionally, to further demonstrate that graduate courses require students to develop knowledge in their field by obtaining information on current literature in the field, the following table is provided that shows the required reading in one graduate course per major program. Syllabi were pulled from the TTU Course Directory in Compliance Assist. Required reading references were extracted to provide current examples from Fall 2014 graduate courses. Several of the course syllabi made reference to additional reading materials that were listed on the students' iLearn accounts. TTU's on-line learning system, iLearn, provides those students with links and bibliographies on scholarly peer-reviewed articles that the faculty member determines is critical to providing foundational and leading-edge research in the students' field of study.

Table 2. Required Reading in One Graduate Course Per Major Program.

| College | Degree | Major Program | Course Number | Required Reading |
|---|---|---|---|---|
| CAS | MS | Biology | 6660 | Fish Ecology:<br>Ross. 2013. Ecology of North American Freshwater Fishes.<br>Vellend (2010)<br>Guegan et al. (1998)<br>Xenopoulos & Lodge (2006)<br>Poff and Allan (1995)<br>Gotelli & Taylor (1999)<br>Leibold et al. (2004) |

| College | Degree | Major Program | Course Number | Required Reading |
|---|---|---|---|---|
| CAS | MS | Chemistry | CHEM6110 | **Inorganic Chemistry:**<br>Inorganic Chemistry by Housecraft and Sharpe, 3rd Ed.<br>Introduction to Coordination Chemistry by E.C. Lisic |
| CAS | MA | English | ENG6000 | **INTRODUCTION TO GRADUATE STUDIES:**<br>Vick, Julie Miller, and Jennifer S. Furlong. "You Have the M.A. What Now?" *Chronicle of Higher Education* 10 July 2013. Web. 21 Aug. 2014. <http://chronicle.com/article/You-Have-the-MA-What-Now-/140169/>. (iLearn)<br>ü Davis, Lennard J. "What I Tell My Graduate Students." *Chronicle of Higher*<br>*Education* 6 Mar. 2011. Web. 15 July 2013. <http://chronicle.com/article/What-I-Tell-My-Graduate/126615/>. (iLearn)<br>ü Kelsky, Karen. "Graduate School Is a Means to a Job." *Chronicle of Higher*<br>*Education* 27 Mar. 2012. Web. 21 Aug. 2014. <http://chronicle.com/article/Graduate-School-Is-a-Means-to/131316/>. (iLearn)<br>ü ADE Ad Hoc Committee on the Master's Degree. *Rethinking the Master's Degree in*<br>*English for a New Century*. Modern Language Association, June 2011. Web. 21 Aug. 2014. http://www.mla.org/pdf/2011adhocrpt.pdf<br>Gerard, John. *The Autobiography of a Hunted Priest*. Trans. Philip Caraman. San<br>Francisco: Ignatius Press, 2012. Print.<br>*MLA Handbook for Writers of Research Papers*. 7th ed. New York: Modern Language<br>Association, 2009. Print.<br>Lakoff, George, and Mark Turner. *More Than Cool Reason: A Field Guide to Poetic*<br>*Metaphor*. Chicago: U of Chicago P, 1989. Print.<br>Shakespeare, William. *Romeo and Juliet*. Any scholarly edition.<br>Tyson, Lois. *Critical Theory Today: A User-Friendly Guide*. 2nd ed. New York:<br>Routledge, 2006. Print.<br>Readings online and on iLearn to print and bring to class—or to view in class on a laptop |
| CAS | MS | Mathematics | MATH6540 | **Calculus of Variations and Applications**:<br>Calculus of Variations, J.M. Gelfand & S.V. Fomin<br>Smirnov, V., A Course of Higher Mathematics, Vol IV, Chapter II<br>Courant, R. & Hilbert, D., Methods of Mathematical Physics, Interscience, NY, Vol I, 1953.<br>Bliss, G.A., Calculus of Variations, Open Court Publishing Co., 1925.<br>Fox, C., An Introduction to the Calculus of Variations, Dover Publications, 1987.<br>Ewing, G.M. Calculus of Variations, Dover Publications, 1985 |
| COBA | MBA | International Business | BMGT6940 | **International Management:**<br>Transnational Management, 6th Edition, Bartlette and Beamish, McGraw Hill.<br>Columia Guide to Online Style by Janice R. Walker and Todd Taylor,<br>iLearn articles:<br>Jollibee Foods Corporation: international expansion<br>Acer, Inc.: Taiwan's Rampaging Dragon<br>Research in Motion: managing Explosive Growth<br>The Globalization of CEMEX<br>Mattel and the Toy Recalls |
| COEd | PhD | Exceptional Learning | EDU 7330 | **Qualitative Inquiry in Education:**<br>Bentz, V. M., & Shapiro, J. J. (1998). *Mindful inquiry in social research*. Thousand Oaks, CA:<br>Sage.<br>Patton, M. Q. (2002). *Qualitative research and*<br>*evaluation methods*. 3rd ed. Thousand Oaks,<br>CA: Sage.<br>Crotty, M. (2003). *The foundations of social research: Meaning and perspective in the research*<br>*process*. London: Sage. |
| COEd | MA or EdS | C&I | EDPY 6310 | **Educational Statistics:**<br>Hays, W.L. (1994). *Statistics.* NY: Harcourt Brace College Publishers.<br>Spatz, C. (2001). *Basic Statistics.* NY: Wadsworth. |
| COEd | MA or | Educational | EDPY 7000 | **Life Span Development** |

| College | Degree | Major Program | Course Number | Required Reading |
|---|---|---|---|---|
| | EdS | Psychology | | Patricia C. Broderick and Pamela Blewitt, The Life Span: Human Development for Helping Professionals, Fourth Edition, Boston: Pearson, 2015<br>*The Glass Castle: A Memoir* by Jeannette Wall<br>*Tuesdays with Morrie* by Mitch Albom.<br>3 peer-reviewed articles on the topic |
| COEd | MA | Exercise Science | EXPW 6510 | **Research Methods:**<br>Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2011). *Research methods in physical*<br>*activity* (6th ed.). Champaign, IL: Human Kinetics. *ISBN*: 978-0-7360-8939-5<br>American Psychological Association. (2009). *Publication manual of the American*<br>*Psychological Association* (6th ed.). Author. *ISBN*: 978-1-4338-0561-5<br>(10) Article Critiques<br>(15) Article Summaries |
| COEd | MA & EdS | Instructional Leadership | INSL 7530 | **Assessment & Evaluation: Improvement in Teaching**<br>Popham, W. J. (2012). *Classroom assessment: What teachers need to know* (6th ed.).<br>Boston, MA: Allyn & Bacon.<br>American Psychological Association (2010). *Publication manual of the APA* (6th ed.).<br>Washington, DC: American Psychological Association.<br>Bartz, A.E. (1999). *Basic statistical concepts* (4th ed.). Upper Saddle River, NJ: Merrill.<br>Tennessee Technological University INSL Field Experience Handbook available at:<br>http://www.tntech.edu/files/insl/TTU_Field_Experience_Handbook_2011.pdf<br>**Plus: Required Special Instructional Materials** |
| COEng | PhD | Engineering | ECE 7600 | **Power System Control**<br>**Required:** Peter W. Sauer and M.A. Pai, Power Systems Dynamics and Stability; Stipes Publishing L.L.C.; 2006; ISBN 1-58874-673-9<br>**References:**<br>P.M. Anderson & A. A. Fouad, Power Systems control and Stability; John Wiley Interscience; 2003; ISBN 0-471-23862-7<br>P. Kundur, Power System Stability and Control; McGraw Hill Inc; 1994<br>Open Literature |
| COEng | MS | Civil | CEE 6300 | **Multi-Scale Analysis of Concrete**<br>*Recommended* Text:<br>S. Mindess, J.F. Young, D. Darwin, Concrete, Prentice-Hall, 2nd Edition, 2003.<br>Additional Reference Texts:<br>Design and Control of Concrete Mixtures, Portland Cement Association, 14th Edition, 2002.<br>P.K. Mehta, P. Monteiro, Concrete: Microstructure, Properties and Materials, McGraw-Hill, 3rd Edition, 2006.<br>A. Neville, Properties of Concrete, Longman, 4th Edition, 1996.<br>Lea's Chemistry of Cement and Concrete, P.C. Hewlett (Editor), John Wiley, 4th Edition, 1998.<br>H.F.W. Taylor, Cement Chemistry, Telford, 2nd Edition, 1997 |
| COEng | MS | Electrical | ECE 7750 | **Advanced Wireless Communication Systems**<br>1. D. Tse and P. Viswanath, Fundamentals of Wireless Communication, Cambridge, 2005.<br>2. A. Paulraj, R. Nabar and D. Gore, Introduction to Space-Time Wireless Communications, Cambridge, 2003.<br>3. R. C. Qiu, Z. Hu, H. Li and M. Wicks, Cognitive Radio Communication and Networking, John Wiley, 2012.<br>4. R. C. Qiu and M. Wicks, Cognitive Sensing and Big Data, Springer, 2013.<br>5. R. C. Qiu and P. Antonik, Big Data: Principles and Applications, John Wiley, 2014 |
| COEng | MS | Mechanical | ME 6030 | **Radiation Heat Transfer**<br>**Text:** Thermal Radiation Heat Transfer, Howell, Segal and Menguc, 5th Ed., CRC Press, 2011.<br>**References:**<br>1. Radiation Heat Transfer, Sparrow and Cess, Brooks/Cole Publishing, 1966.<br>2. Thermal Radiative Transfer & Properties, Brewster, Wiley, 1992.<br>3. Radiative Heat Transfer, 2nd Ed., Modest, Academic Press, 2003. |

| College | Degree | Major Program | Course Number | Required Reading |
|---|---|---|---|---|
| | | | | 4. Thermal Radiative Heat Transfer, Siegel and Howell, McGraw-Hill, 1972. |
| IDS | PhD | ENVS | EVSC7210 | **Organic Chemistry in the Environment**<br>Larson & Weber, "Reaction Mechanisms in Environmental Organic Chemistry", Lewis Publishers, 1994. ISBN 0-87371-258-7<br>Manahan, "Environmental Chemistry", Lewis Publishers, 2000. ISBN 1-56670- 492-8<br>Schwarzenback et. al, "Environmental Organic Chemistry", Wiley-Interscience; 2 edition (June 15, 2002). ISBN **:** 978-0471350538<br>Martha J.M. Wells, "Principles of Extraction and the Extraction of Semivolatile Organics from Liquids", pages 37–81<br>Harvey, "Polycyclic aromatic hydrocarbons- Chemisty and carcinogenicity", Cambridge University Press, 1991. |

**Access to current literature – Scholarly journals.** A wide variety of databases are utilized across campus to assist students in accessing the most current literature available for their discipline. The following databases [2] support graduate student literature reviews and the theoretical foundations required to pursue research in the discipline.

Table 3. Databases That Support Graduate Student Literature Reviews.

| College/Program | Databases Accessible through Tennessee Tech University Library |
|---|---|
| Engineering &<br>IDS - PSM | Applied Science & Technology Full Text<br>ASCE Library<br>ASME Transactions Journals<br>DOE Green Energy<br>Emerald Management Xtra 120<br>Energy Citations Database<br>IEEE All-Society Periodicals Package (ASPP)<br>Information Bridge: DOE Scientific and Technical Information<br>Knovel<br>Military & Intelligence Database<br>Safari Tech Books Online<br>Scitation |
| Business Administration<br>IDS – Professional Studies | ABI/INFORM Global<br>ArXiv.org (Cornell University Library)<br>BNA Tax Management Portfolios<br>Business Insights: Essentials<br>Business, Economics, and Theory Collection<br>CCH IntelliConnect<br>Emerald Management Xtra 120<br>FASB Accounting Standards Codification<br>Gartner Research<br>General BusinessFile ASAP<br>LexisNexis Academic<br>Mergent Archives<br>Mergent Online<br>NBER Working Papers<br>ReferenceUSA<br>RIA Checkpoint<br>Salem History<br>Small Business Collection<br>Small Business Resource Center<br>Value Line Investment Survey |
| School of Nursing<br>& IDS PSM | Agency for Healthcare Research and Quality<br>AHFS Consumer Medication Information<br>BioMed Central Open Access<br>Blackwell Journals<br>CINAHL Complete<br>Cochrane Central Register of Controlled Trials<br>Cochrane Methodology Register<br>Database of Abstracts of Reviews of Effects (DARE)<br>Health & Wellness Resource Center<br>Health Reference Center Academic<br>Health Source - Consumer Edition<br>Health Source: Nursing/Academic Edition<br>Health Technology Assessment Database (HTA)<br>Highwire Press<br>Lexicomp Online<br>MEDLINE / PubMed<br>National Guideline Clearinghouse (NGC)<br>NHS Economic Evaluation Database (NHS EED)<br>Nursing and Allied Health Collection<br>Nutrition Care Manual<br>Ovid Nursing Journals<br>Public Library of Science (PLoS)<br>PubMed Central (PMC)<br>Salem Health<br>Salem Science (Forensic Science)<br>STAT!Ref- Nursing |
| Education | BioMed Central Open Access<br>Blackwell Journals<br>EdITLib Digital Library<br>Education Full Text<br>Educator's Reference Complete<br>ERIC (Educational Resource Information Center)<br>Health & Wellness Resource Center<br>Health Reference Center Academic<br>Highwire Press<br>InfoTrac Junior Edition K-12<br>InfoTrac Kids InfoBits<br>InfoTrac Student Edition<br>InfoTrac Student Edition K-12 |

| College/Program | Databases Accessible through Tennessee Tech University Library |
|---|---|
| | LearningExpress Library<br>MEDLINE / PubMed<br>Mental Measurements Yearbook<br>National Geographic<br>Physical Education Index<br>Physical Therapy and Sports Medicine Collection<br>Professional Collection (education)<br>Public Library of Science (PLoS)<br>PubMed Central (PMC)<br>Teacher Reference Center<br>TEL Lesson Plans |
| Arts & Sciences<br>Biology | BioMed Central Open Access<br>Blackwell Journals<br>EdITLib Digital Library<br>Education Full Text<br>Educator's Reference Complete<br>ERIC (Educational Resource Information Center)<br>Health & Wellness Resource Center<br>Health Reference Center Academic<br>Highwire Press<br>InfoTrac Junior Edition K-12<br>InfoTrac Kids InfoBits<br>InfoTrac Student Edition<br>InfoTrac Student Edition K-12<br>LearningExpress Library<br>MEDLINE / PubMed<br>Mental Measurements Yearbook<br>National Geographic<br>Physical Education Index<br>Physical Therapy and Sports Medicine Collection<br>Professional Collection (education)<br>Public Library of Science (PLoS)<br>PubMed Central (PMC)<br>Teacher Reference Center<br>TEL Lesson Plans |
| Arts & Sciences<br>Chemistry | ACS Publications<br>American Chemical Society Legacy Archives<br>CRC Handbook of Chemistry and Physics<br>Environment Index<br>General Science Full Text<br>Information Bridge: DOE Scientific and Technical Information<br>PubChem<br>SciFinder Scholar |
| Arts & Sciences<br>Math | ArXiv.org (Cornell University Library)<br>MathSciNet<br>Project Euclid Complete<br>SIAM Journals Online |
| IDS<br>Environmental Science | Applied Science & Technology Full Text<br>Catalogue of Ostracoda<br>General Science Collection<br>General Science Full Text<br>GeoRef<br>Geothermal Technologies Legacy Collection<br>Mineralogical Abstracts<br>National Geographic<br>SciFinder Scholar |
| General-All Majors | American Doctoral Dissertations, 1933-1955<br>Blackwell Journals<br>CareerOneStop<br>Directory of Open Access Scholarly Journals in Education<br>Dissertations & Theses<br>EBSCO E-Book Collection<br>EBSCOhost Electronic Journals<br>Expanded Academic ASAP<br>FDSys - Government Publications<br>FindArticles<br>Gale Virtual Reference Library<br>General OneFile<br>General Reference Center Gold<br>Google Scholar<br>Informe Academico |

| College/Program | Databases Accessible through Tennessee Tech University Library |
|---|---|
| | J-STAGE<br>JSTOR<br>National Newspaper Index<br>Omnifile Full Text Mega Edition<br>Opposing Viewpoints in Context<br>Oxford Reference Online: Premium<br>PowerSearch<br>Readers' Guide Full Text<br>Springer ebook Collection<br>Tennessee Electronic Library (TEL) |

**University Theses and Dissertation Policy Manuals and Support**

Each semester graduate students are invited to attend University-sponsored theses and dissertation workshops. The workshops are conducted by Graduate College staff members and provide detailed instructions on the thesis and dissertation requirements of the University. In addition to being provided a policy manual and examples, students are also supplied instructions on document submission processes [7].

Each college defines the literature review requirements and research methodologies for student theses and dissertations. The advisory committee approves the research questions, hypotheses, limitations, delimitations, methods, participants, study design, data collection, literature review, measurement and instrumentation, data analysis/statistical procedures, and discussion of findings. The Graduate College ensures that the research document complies with University-accepted policies for formatting and grammatical correctness and provides instruction on the process to publish the document.

**Conclusion**

The TTU graduate curriculum is rigorous. Students gain knowledge in the literature of the discipline, engage in hands-on research, and experience the necessary activities to become masters of the discipline. Through faculty mentoring and up-to-date and dynamic curriculum, student learning outcomes are met throughout the program. Through the policies, processes, procedures, and practices of the graduate degree program, TTU effectively meets the compliance standards of Comprehensive Standard 3.6.2.

## Sources


[1] Office of Research Graduate Student Funding

[2] Volpe Library Databases

[3] Approval of Academic Programs, Units, and Modifications

[4] New Programs & Program Modifications

[5] Program of Study

[6] Non-Thesis Requirements

[7] Electronic Thesis Dissertation Information