

2.8

Faculty

The number of full-time faculty members is adequate to support the mission of the institution and to ensure the quality and integrity of each of its academic programs.

Upon application for candidacy, an applicant institution demonstrates that it meets the comprehensive standard for faculty qualifications

Judgment

Compliance Partial Compliance Non-Compliance Not Applicable

Narrative

Tennessee Technological University (TTU) employs an appropriate number of faculty members to support the mission of the institution as the state's technological university and to guarantee the quality and integrity of each of the academic programs. TTU determines that the number of faculty is adequate through a number of processes including the following:

- Strategic planning to accomplish the TTU mission;
- Documentation of and adherence to policies for faculty workload planning and faculty program oversight;
- Participation in regular reviews of faculty number adequacy including discipline-specific accreditation activities involving external reviews; academic audits or other external peer reviews; national benchmarking through the Delaware Study; and ongoing internal reviews at all levels of the University community.

These processes ensure that TTU effectively addresses Core Requirement 2.8.

Definition of Faculty

Based on the definition provided by the Tennessee Board of Regents (TBR), the TTU Faculty Handbook defines the designation "faculty," as follows:

The term "faculty" shall be limited to regular, full-time personnel . . . whose regular assignments include instruction, research, and/or public service as a principal activity, and who hold academic rank as professor, associate professor, assistant professor or instructor at the institutions . . . [1]

"Regular full-time faculty" refers to persons whose appointments are for a complete academic or fiscal year and whose assignments in the areas of instruction, research, and/or public service are at least 50 percent of the total assigned duties. In addition, the duties must be assignable to expenditures accounts designated as Instruction, Research, Public Service, and/or Academic Support [1].

The Faculty Handbook further delineates faculty who are not considered to hold full-time positions.

The term "faculty" shall not, for the purposes of this statement, include members of an institution's or school's instructional personnel defined as "adjunct faculty," part-time teachers, post-doctoral fellows, visiting lecturers, and graduate assistants. "Adjunct

faculty” is defined as professional staff members of businesses, industries, and other agencies and organizations who are appointed by institutions and schools on a part-time basis to carry out instructional, research, or public service functions [1].

According to TTU policy, “faculty” may include administrators who hold academic rank.

If not otherwise included within the above definition of “faculty,” the term “faculty” may include, provided they hold academic rank, academic department or division chairpersons or directors, academic deans, academic vice presidents, presidents, and area school directors, who have direct line authority over faculty as hereinabove described, and associates or assistants for the above positions. In addition, the term “faculty” may include persons previously designated as members of the faculty who are assigned to other positions at the institution or school [1].

This definition is consistent with the Tennessee Board of Regents Policy 5:02:01:00 Definition of Faculty [2]. However, TBR Policy 5:02:07:10 [3] expands the use of the term “faculty” in describing the types of faculty appointments in universities. This TBR policy is summarized in the Faculty Appointments section of the TTU *Faculty Handbook*, which specifies the types of appointments as follows [4]:

- Temporary,
- Tenure-track,
- Tenure,
- Clinical-track,
- Research, and
- Coordinator.

The Faculty Handbook states that temporary faculty may include “lecturers, adjunct or part-time faculty, faculty employed to replace regular faculty on leave of absence, and faculty employed for grants or for projects funded in whole or in part by non-appropriated funds.” Temporary appointments may also be used for the following:

. . . faculty employed on the basis of state appropriated funds in academic units where the permanent and continued need for the position has not been established, provided that such appointments normally should not exceed three academic years. After that, the position can be re-advertised, and the instructor can apply again and be hired if he/she is the best candidate. Appointments of faculty members supported by more than fifty percent (50%) grant funds, or other soft money sources, may be approved by the President for periods exceeding three years. Lecturer appointments are full-time faculty appointments at the rank of Lecturer, Senior Lecturer and Master Lecturer. These appointments are for a fixed three-year period, are non-tenurable, and are renewable based on satisfactory annual performance reviews. [4]

The Faculty Handbook [4] gives further information on the other types of faculty appointments listed above. Unless otherwise stated, the term “faculty” in this narrative includes all personnel hired for faculty appointments using this more expansive specification from TBR Policy 5:02:07:10 [3].

Number and Distribution of Faculty

Table 1 lists the number of full-time, full-time-equivalent (FTE), part-time, and part-time FTE faculty for each program. The table was developed by reviewing the personnel for all courses taught during the Fall 2014 and Spring 2015 semesters and categorizing the courses and faculty by program. In Table 1, full-time faculty (professors, associate professors, assistant professors, and instructors) were counted for the programs in departments from which they were paid, whereas part-time faculty (e.g., adjuncts and administrators) were counted for the programs in which they taught. For full-time faculty in departments with multiple programs, (e.g., BS and MS), an individual faculty member was

counted only for the program(s) in which he or she taught. The full-time-equivalency of part-time faculty was calculated by dividing the load of each part-time individual by 15, the TBR-defined full-time load, and counted for the program in which the course was taught. For example, an adjunct faculty member who taught both a three-credit-hour undergraduate chemistry course and a three-credit-hour undergraduate biology course would appear as 0.2 FTE in the Chemistry BS program and 0.2 FTE in the Biology BS program with a headcount of "1" in each program.

Because some faculty may have had other, non-teaching assignments during 2014-2015 academic year, the numbers shown in Table 1 may represent, in some cases, fewer than the actual number of faculty teaching in a program. The totals in Table 1 include all faculty teaching for a program, whether delivering courses on the TTU campus or participating in distance courses or courses at a 2+2 site. Additional information is provided below for programs involving interdisciplinary, distance, and 2+2 components.

Table 1. Full-Time and Part-Time TTU Faculty Distribution (Fall 2014 and Spring 2015).

Program	Degree Level	Full-Time Faculty		Part-Time Faculty	
		Head-count	Full-time Equiv.	Head-count	Full-time Equiv.
Agriculture	BSAG	11	10	3	0.67
Environmental & Sustainability Studies	BS	2	2	1	0.20
Professional Science	PSM	2	2	1	0.20
Environmental Sciences	PHD	8	8	0	0.00
Wildlife & Fisheries Science	BS	8	8	1	0.20
Communication	BS	10	10	5	2.00
Computer Science	BS	7	7	6	2.80
Computer Science	MS	7	7	0	0.00
Curriculum & Instruction	MA	27	27	11	3.07
Curriculum & Instruction	EDS	17	17	2	0.40
Exceptional Learning	PHD	17	17	7	3.47
Instructional Leadership	MA	4	4	0	0.00
Instructional Leadership	EDS	3	3	2	1.20
Special Education	BS	4	4	2	0.80
Educ Psych & Counselor Educ	MA	9	9	2	0.40
Educ Psych & Counselor Educ	EDS	3	3	0	0.00
Secondary Education	BSED	4	4	3	0.73
Multidisciplinary Studies	BS	20	20	12	4.40
Early Childhood Education	BS	4	4	0	0.00
Adv Studies in Tchg & Learning	MED	0	0	1	0.40
Engineering	PHD	35	35	0	0.00
Chemical Engineering	BSCHE	8	8	3	0.73
Chemical Engineering	MS	7	7	0	0.00
Civil Engineering	BSCE	13	13	2	1.20
Civil Engineering	MS	13	13	0	0.00
Electrical & Computer Engineering	BSCMPE/BSEE	14	14	2	0.74

Electrical & Computer Engineering	MS	13	13	0	0.00
Mechanical Engineering	BSME	18	18	6	1.80
Mechanical Engineering	MS	16	16	1	0.20
Engineering Technology	BSET	5	5	4	0.87
Foreign Languages	BA	8	8	5	3.20
Human Ecology	BSHE	9	9	11	3.87
English	BA	29	29	27	16.60
English	MA	9	9	0	0.00
Interdisciplinary Studies	BS	3	3	22	7.40
Professional Studies	BS	1	1	4	1.80
Professional Studies (RODP)	MPS	4	4	3	0.60
Biology	BS	20	20	4	0.53
Biology	MS	14	14	0	0.00
Mathematics	BS	24	24	7	6.00
Mathematics	MS	14	14	1	0.20
International Business and Cultures	BS	1	1	0	0.00
Ex Science, Phy Educ & Wellness	BS	9	9	17	7.87
Ex Science, Phy Educ & Wellness	MA	4	4	5	2.20
Chemistry	BS	22	22	4	1.07
Chemistry	MS	12	12	1	0.20
Geosciences	BS	7	7	2	1.00
Physics	BS	9	9	0	0.00
Psychology	BS	12	12	5	2.40
Political Science	BS	4	4	1	0.40
Sociology	BS	12	12	16	6.40
History	BA/BS	12	12	6	2.60
Fine Arts	BFA	10	10	13	4.53
Music	BM	23	23	14	10.00
Nursing	BSN	16	16	3	1.07
Nursing (RODP)	MSN	7	7	6	5.60
Business Administration	MBA	16	16	0	0.00
Business Management	BSBA	10	10	15	8.00

Accounting	BSBA	8	8	7	3.20
Economics	BSBA	6	6	1	0.20
Finance	BSBA	4	4	2	0.80
Marketing	BSBA	4	4	2	1.40

A 2013 report by the Council for Higher Education Accreditation (CHEA) cites a 2009 analysis from the American Federation of Teachers showing that full-time faculty represented 54.2% of the total faculty at public comprehensive universities. The percentages in the CHEA report were adjusted “to represent faculty positions only” and specifically excluded graduate assistants because the “role of graduate students in instruction is not always clear” [5]. A comparable analysis for TTU during the Fall 2014 and Spring 2015 semesters shows that full-time faculty represented 56.8% of the total faculty headcount and 74.1% of the FTE headcount. In addition, full-time faculty taught 83.0% of all course hours scheduled during that period [6]. The TTU percentage of full-time faculty exceeds the CHEA reported average for public comprehensive universities, and the TTU percentage of course hours taught by full-time faculty is high. Thus, the number of full-time faculty at TTU appears to be reasonable.

Interdisciplinary programs. Several programs represent interdisciplinary instructional efforts. Because these programs utilize courses and faculty from various programs throughout the University, the number of faculty associated with an interdisciplinary program may, in some cases, appear to be small. For example, Table 1 shows two full-time faculty members for the Bachelor of Science in Environmental and Sustainability Studies (ESS) during the 2014-2015 academic year; however, depending on the option selected, students in this program take a variety of courses from biology, geology, civil engineering, and geography, among other disciplines. Instructors of these related courses are not included in the headcount for ESS. Furthermore, these “ESS Associate Faculty” members from the related programs are actively involved in ESS program development through participation in a faculty advisory committee. The advisory committee meets approximately once per semester to provide input and guidance to the ESS program on institutional effectiveness and other academic matters. Other interdisciplinary programs operate in a similar manner.

Interdisciplinary programs at TTU include the following:

- BS in Environmental and Sustainability Studies,
- BS in Interdisciplinary Studies,
- BS in International Business and Cultures,
- MS in Professional Science (PSM), and
- PhD in Environmental Science

Distance programs. In addition to programs on campus, TTU offers distance programs in the College of Business; College of Education; Department of Exercise Science, Physical Education and Wellness; School of Nursing; School of Interdisciplinary Studies; and College of Engineering. The faculty numbers for these distance programs are included in Table 1 because the distance programs, which differ only in delivery method, are considered to be part of the regular, campus-based programs. Some programs use both full-time faculty and adjuncts for their distance components, but all courses in the distance MBA are taught by full-time faculty.

Some TTU distance programs are collaborative efforts via the TBR Regents Online Degree Program (RODP), which offers programs of study through a consortium of the six TBR universities: Austin Peay State University, East Tennessee State University, Middle Tennessee State University, Tennessee State University, Tennessee Technological University, and The University of Memphis. Students may choose a “home campus” from among these six institutions, and courses available to RODP students may be taught by faculty from any of the institutions. Table 1 includes the following four RODP programs:

- Master of Science in Nursing,
- Master of Education in Advanced Studies in Teaching and Learning,
- Bachelor of Science in Professional Studies, and
- Master of Science in Professional Studies.

The faculty numbers shown in Table 1 for these programs reflect only the faculty from TTU and thus may appear to be low. For example, Table 1 shows no full-time faculty and only one adjunct for the RODP Master of Education in Advanced Studies in Teaching and Learning program because TTU has developed only one course for this program. All other courses in this program have been developed and are taught by faculty at the other five TBR institutions. The instructor for the TTU course recently retired as a full-time faculty member but is continuing to teach the course as an adjunct. A full-time faculty member in the Department of Curriculum and Instruction serves as advisor for TTU students in this program. However, she is not listed in Table 1 because she did not teach a course in this program during the 2014-15 academic year.

2+2 programs. The College of Education and the School of Interdisciplinary Studies both have 2+2 programs that involve many community colleges in Middle Tennessee. The College of Education offers a Bachelor of Science in Multidisciplinary Studies K-6 Licensure program with a concentration in Elementary Education on the campuses of the following community colleges:

- Pellissippi State (Hardin Valley)
- Roane State (Crossville, Harriman, Oak Ridge, and Scott County)
- Motlow State (McMinnville and Moore County)
- Chattanooga State

This 2+2 program allows the applicant to complete the first 60 hours at the local community college before transferring to TTU to complete the remaining 60 credit hours. Some TTU courses in the remaining 60 credit hours must be completed online, but many are provided by TTU faculty at the community college site. Courses are scheduled as a full-time, cohort-based program of study at each community college campus. Because the program is cohort-based beginning each fall, the number of courses that must be offered in a semester is reduced. Adjuncts are used for some courses.

The School of Interdisciplinary Studies also offers a 2+2 program leading to the Bachelor of Science degree. The program is available through the Motlow State and Roane State sites with some classes such as the senior capstone project offered only online.

A new 2+2 program offered by the College of Engineering began in the Fall 2014 semester. The Department of Manufacturing and Engineering Technology offers courses at Volkswagen Academy in Chattanooga as part of a 2+2 program with Chattanooga State Community College and Volkswagen. Students in the program can earn a Bachelor of Science in Engineering Technology degree. Up to 48 of the 127 required credit hours are taught by TTU faculty or adjuncts at the Academy site. Chattanooga State Community College teaches up to 50 credit hours, and the remaining hours are offered through online courses.

The faculty distribution in these 2+2 programs is shown in Table 2. Most of the faculty members are teaching in the BS in Multidisciplinary Studies K-6 Licensure program. As stated previously, the Table 2 faculty numbers are included in the program totals shown in Table 1.

Table 2. Full-time and Part-time 2+2 Faculty Distribution (Fall 2014 and Spring 2015).

Site Code	Site Location	Full-Time Faculty		Part-Time Faculty	
		Head-count	Full-time Equiv.	Head-count	Full-time Equiv.
T60	Motlow State Community College	5	5	4	0.73
T64	Roane State Community College	3	3	4	1.07
T65	Chattanooga State Community College	6	6	4	0.73
TBM	Scott County Higher Education Center	4	4	5	1.27
TBN	Cumberland County Higher Education Center	6	6	5	1.73
TPI	TTC – McMinnville	4	4	7	1.67
TPK	Roane State Community College - Oak Ridge	5	5	10	3.00
TPL	Pellissippi State Community College	7	7	3	0.60
T66	Volkswagen Academy - Chattanooga	1	1	1	0.13

Strategic Planning to Accomplish the TTU Mission

Administrators and faculty at TTU engage in strategic planning to enable TTU to carry out its mission, which is to serve the people of the Upper Cumberland region in Tennessee, as well as the nation and the world, by providing outstanding academic programs as the state’s technological university. The mission, in part, is stated as follows:

Tennessee Technological University’s mission as the state’s only technological university is to provide leadership and outstanding programs in engineering, the sciences, and related areas that benefit the people of Tennessee and the nation. The University also provides strong programs in the arts and sciences, business, education, agriculture and human ecology, nursing, music, art, and interdisciplinary studies. Tennessee Tech serves students from throughout the state, nation, and many other countries, but it retains a special commitment to enrich the lives of people and communities in the Upper Cumberland region of Tennessee [7].

In the fall of 2012, President Philip Oldham initiated a strategic planning effort that led to the development of Flight Plan, which defines the directions for action to carry out the TTU mission and establishes the priorities for budgetary decisions. The initiatives in Flight Plan include consideration of having an adequate number of faculty [8]. For example, in the focus area of Undergraduate Education, a key priority is to improve access to high-demand courses. One of the actions identified to improve access is to add new faculty. Another key priority, which is in the focus area of Distinctive Programs, is to offer new graduate programs in high-demand, distinctive areas. New programs are currently under development with consideration being given to the need for additional faculty. Budget decisions related to additional faculty are prioritized based on the goals in Flight Plan, which was developed to

support the TTU mission.

Faculty Roles and Responsibilities

The responsibilities of full-time faculty are specified in TTU Policy 203 on Faculty Roles and Responsibilities [9] to include these three primary functions:

- (1) teaching,
- (2) research/scholarship/creative activity, and
- (3) service/outreach.

The Agreement on Responsibilities form [10] used for faculty activity/workload planning identifies these three roles/responsibilities plus two other areas of responsibility, advisement and administration, that may be applicable for faculty.

Faculty workload planning. Policy 203 also specifies that, prior to the end of the spring semester of each year, the activities and percentage of effort expected for a faculty member in the five areas of responsibility will be determined through discussion and agreement between the faculty member and the administrator to whom he or she reports. The agreement is documented using the Agreement on Responsibilities form, and the percentages of effort are considered in the annual evaluation of each faculty member.

The specific responsibilities expected of and assigned to a faculty member vary by department based on considerations such as number of degree programs, number of students in the programs, research projects, committee assignments, professional service commitments, and faculty expertise. For example, a faculty member in a program with a large undergraduate program might be appointed to serve as academic advisor for 25 students, whereas a faculty member in a small program might be an advisor to only five students with a corresponding reduced percentage of effort allocated for advising. Another example is the allocation of a significant percentage of effort in the service category to a faculty member for leading the preparation of an accreditation or an academic audit self-study report.

Faculty workload policies. The Agreement on Responsibilities workload assignments must follow the guidelines for full-time faculty as detailed in the *Faculty Handbook* under General Personnel Policy [11].

- *All full-time personnel including faculty shall be required to devote a minimum of 37.5 hours per week to the institution . . . and shall maintain appropriate office hours as determined by the president (or his or her designee) . . . Calculation of the 37.5-hour week shall follow such guidelines as promulgated by the Chancellor.*
- *Within the requirement of a minimum of 37.5 hours per week, faculty at universities, community colleges, or technical institutes shall be required to carry a full teaching load, which shall be 15 credit hours or the equivalent per term for undergraduate courses, 12 credit hours or the equivalent per term for graduate courses, 225 non-credit contact hours or the equivalent per term. All equivalent teaching load activities shall be subject to prior review and approval by the president (or his or her designee).*

Although a full faculty load is nominally 15 credit hours or equivalent per term for undergraduate courses or 12 credit hours for graduate courses, the actual teaching workloads are typically at most 12 credit hours of undergraduate courses or nine credit hours of graduate courses. The remaining three credit hours are allocated for faculty participation in activities such as departmental, college, or university committees; program oversight; student organization advising; academic advising; and professional development. In addition, the faculty members in a program are responsible for developing, assessing, and improving the program. Most tenured faculty members participate in academic advising and serve on at least one departmental, college, or university committee.

Funded research/scholarship/creative activity projects and professional service activities may further

reduce the assigned teaching credit hours for a faculty member. To encourage the development of a research program, some units give tenure-track faculty a reduced teaching load during the first year or two of employment. Faculty members may also be supported in a professional service activity that enhances professional development or program outreach. Thus, faculty workloads in a particular program can be adjusted to support the research/scholarship/creative activity and service/outreach missions of that program.

The *Faculty Handbook* states the minimum expectations for faculty to be available for office hours.

In addition to their teaching duties, faculty members are expected to set aside hours for conferences with students. A schedule of 30 clock hours each week on the campus, including class hours, is regarded a reasonable minimum, and such a schedule of class and office hours should be posted by all faculty members on their office doors [12].

The University recognizes that, in some circumstances, faculty may need to perform additional assignments as an overload for which extra compensation may be warranted. These assignments are to be reported on the annual Agreement on Responsibilities. Tennessee Code Annotated (T.C.A.) § 49-5-410 limits full-time university faculty members to teaching no more than two credit courses per semester and to no more than 15 clock hours per week or 400 clock hours per nine-month period for extra pay. Overload assignments are expected to require only a reasonable time commitment and must not constitute a conflict of interest with the University. Additional requirements, along with compensation guidelines for faculty teaching credit courses as an overload, are available in Human Resources Policies and Procedures, Section 18, Outside Employment and Extra Compensation [13].

Faculty oversight of academic programs. The faculty members for an academic program have primary responsibility for the oversight of that program. Processes are in place to enable the faculty to propose new courses, modifications or deletions of existing courses, and curriculum revisions. The program's faculty members regularly assess the quality of the program and determine when changes are needed. Program quality and effectiveness is assessed in part through participation in either an external accreditation review or an academic audit review if program accreditation is not available. In addition, each department or unit collects data annually on the effectiveness of program goals and the extent to which student learning outcomes are met and reports these outcomes in the Institutional Effectiveness system. An example is the 2013-14 Institutional Effectiveness Report for the BS program in Mechanical Engineering [14]. These assessment processes lead to identification of changes for improvement of the academic programs.

For undergraduate programs, curriculum changes may be proposed by the program's Curriculum Committee or the program faculty as a whole. Approval is first obtained from the program faculty, then the college or school curriculum committee, and finally the University Curriculum Committee for undergraduate proposals and the Graduate Studies Executive Committee for graduate proposals.

Program changes other than curriculum are proposed by the program or unit faculty. The program faculty work with the college or school as appropriate to identify and secure support for any additional necessary resources. An excerpt from the minutes of a faculty meeting to discuss program changes in Computer Science is an example [15].

Policy 203 documents the faculty's role in both academic and governance matters [9].

Evidence of Faculty Number Adequacy to Ensure Quality Programs

TTU participates in regular external and internal review activities to assess the sufficiency of the number of full-time faculty to ensure the quality and integrity of the academic programs. These reviews include (1) discipline-specific accreditation activities involving self-studies and external reviews, (2) academic audits or other external peer reviews; (3) national benchmarking through the Delaware National Study of Instructional Costs and Productivity, and (4) ongoing internal reviews.

Discipline-specific accreditation activities. Many of TTU's academic units participate in discipline-specific accreditation processes in which criteria examine the adequacy of faculty to maintain quality

programs. TTU accredited programs are shown in Table 3 with the related nationally recognized accrediting organization.

Table 3. Accredited Programs and Accrediting Organizations.

College	Degree/Program	Accreditation
Agriculture and Human Ecology	Human Ecology (Baccalaureate)	American Association of Family and Consumer Sciences (AAFCS)
	Didactic Program in Dietetics (Baccalaureate)	Accreditation Council for Education in Nutrition and Dietetics (ACEND)
Arts and Sciences	Chemistry (Baccalaureate)	American Chemical Society (ACS)
Business	Business Administration (Baccalaureate)	The Association to Advance Collegiate Schools of Business (AACSB International)
	Business Administration (Master)	
	Accounting (Baccalaureate)	
Education	Special Education; Child & Family Studies; Multidisciplinary Studies; Exercise Science, Physical Education & Wellness; Secondary Education (Baccalaureates)	Council for the Accreditation of Educator Preparation (CAEP)
	Curriculum & Instruction; Instructional Leadership; Educational Psychology & Counselor – Education; Exercise Science, Physical Education & Wellness (Masters)	
	Curriculum & Instruction; Instructional Leadership; Educational Psychology & Counselor (Education Specialists)	
	Fine Arts (Baccalaureate)	National Association of Schools of Art and Design (NASAD)
	Music (Baccalaureate)	National Association of Schools of Music (NASM)
Engineering	Chemical Engineering; Civil Engineering; Computer Engineering; Electrical Engineering; Mechanical Engineering (Baccalaureates)	Engineering Accreditation Commission of ABET (EAC/ABET)
	Computer Science (Baccalaureate)	Computing Accreditation Commission of ABET (CAC/ABET)
	Manufacturing and Engineering Technology (Baccalaureate)	Association of Technology, Management, and Applied Engineering (ATMAE)
		Commission on

Nursing	Nursing (Baccalaureate)	Collegiate Nursing Education (CCNE)
	Nursing (Master)	Accreditation Commission for Education in Nursing (ACEN)

Academic audits or external program reviews. In accordance with the Performance Funding guidelines of the Tennessee Higher Education Commission (THEC), each non-accreditable undergraduate program undergoes either an academic audit or external program review according to a pre-approved review cycle. In fulfillment of quality initiatives by the TBR, TTU programs without an accreditation option participate in regular academic audits on an approximate five-year cycle.

The Academic Audit is a faculty-driven model of ongoing self-reflection, collaboration, teamwork and peer feedback. It is based on structured conversations among faculty, stakeholders, and peer reviewers all focused on a common goal: to improve quality processes in teaching and learning and thus enhance student success. During the self-study phase of the Academic Audit, the faculty look at the key activities in place that regularly improve the quality of teaching and learning. Faculty members reflect on how they organize their work and how they use data to make decisions. The faculty may also note opportunities for improvement during this self-study phase and thus identify initiatives for improvement. These are undertaken during ensuing years. The Academic Audit model also involves a review by peers called the Academic Auditor Team. This team reviews a program’s self-study report, conducts a site visit, and writes its own report that includes commendations, affirmations and recommendations for continued improvement [16].

A goal of the audit is to identify opportunities for improvement. In specifying initiatives for improvement, the academic audit guidelines instruct the faculty to “sketch out actions that would have a strong positive impact on education quality” [16]. The program is asked to “demonstrate that your unit is capable of carrying out the initiative, especially in light of other demands on your time and resources” and to communicate any needs for additional support [16]. Thus, the academic audit provides an opportunity for programs to reflect on the adequacy of the number of faculty in the program.

National Study of Instructional Costs and Productivity. TTU participates in benchmarking through the National Study of Instructional Costs and Productivity, i.e., the Delaware Study. Table 4 provides the results from the 2013 Delaware Study, the most recent data available, showing the percentage of undergraduate student credit hours (SCH) taught by full-time-equivalent faculty at TTU as compared to national norms. It should be noted that the numbers reported in the Delaware Study do not include any RODP instruction but do include activity at the 2+2 sites along with activity on the main campus. The Delaware Study also separates the data by academic disciplines, which are different than programs or departments; thus, programs such as Multidisciplinary Studies would be included as part of Curriculum and Instruction for purposes of the Delaware Study.

The results in Table 4 show that TTU had seven undergraduate academic disciplines below the national norms for the percentage of undergraduate SCH taught by full-time faculty as of the Fall 2014 semester. Table 5 provides an explanation for each of the seven disciplines having its percentage below the national norm along with information on academic year (AY) 2015-16 new hires for these disciplines.

Table 4. Percentage of Undergraduate SCH Taught by Full-time Faculty.

CIP Code	Academic Discipline	Highest Degree Awarded	Percent of Undergraduate SCH Taught by Full-Time Faculty		TTU Percent of National Norm
			TTU	National Norm	
1.00	Agriculture, Agriculture Operations, & Related Sciences	B	92	88	105%
11.07	Computer Science	BM	59	84	70%*
13.03	Curriculum and Instruction	BMD	75	53	140%
13.11	Student Counseling and Personnel Services	BM	91	31	293%*
14.01	Engineering, General	-	87	89	98%*
14.07	Chemical Engineering	BMD	95	90	105%
14.08	Civil Engineering	BMD	86	85	102%
14.10	Electrical, Electronics and Communications Engineering	BMD	83	83	100%
14.19	Mechanical Engineering	BMD	97	86	113%
15.06	Industrial Production Technologies/Technicians	B	73	85	86%*
16.01	Linguistic, Comparative, and Related Language Studies and Services	B	73	59	123%
19.01	Family & Consumer Sciences/ Human Sciences, General	B	60	62	97%*
23.01	English Language and Literature, General	BM	69	55	126%
26.01	Biology, General	BM	97	78	124%
27.01	Mathematics	BM	83	62	133%
31.05	Health and Physical Education/Fitness	BM	51	61	84%*
40.05	Chemistry	BMD	94	77	122%
40.06	Geological and Earth Sciences/ Geosciences	B	96	81	119%
40.08	Physics	B	100	81	123%
45.10	Political Science and Government	B	94	81	115%
45.11	Sociology	B	77	75	102%
50.07	Fine and Studio Art	B	69	65	106%
50.09	Music	B	49	63	77%*
51.38	Nursing	B	96	81	118%
52.02	Business Administration, Management and Operations	BM	49	79	62%*
52.03	Accounting and Related Services	B	89	84	106%
52.06	Business/Managerial Economics	B	100	80	125%

52.08	Finance and Financial Management Services	B	80	76	105%
52.14	Marketing	B	81	75	108%
54.01	History	B	81	78	104%

NOTE: The TTU measure utilizes Fall 2014 information; however, the "National Norm" comparison information is a three-year average of the latest information available from the Delaware Study (Fall 2010, Fall 2011, and Fall 2012). The national comparison is based on the highest degree awarded rather than Carnegie classification.

*Table 5. Explanation for Programs with Percentages Below National Norms.

CIP Code	Academic Discipline	TTU Percent of National Norm	Explanation
11.07	Computer Science	70%	<p>The department has experienced significant growth over the last five years in both numbers of undergraduate majors (84% increase) and student credit hours (66% increase). Section sizes have increased as well as coverage by adjuncts in lower division courses. The problem was exacerbated by the recent retirement of a faculty member who generated a very large proportion of student credit hours. In response, the department received approval to search for an additional two faculty lines, one of which has been filled for AY 2015-16, and will request a third. The proportion of student credit hours taught by full time faculty will significantly increase.</p>
14.01	Engineering, General	98%	<p>The Basic Engineering Department has seen a large increase in enrollment since 2009, and the retirement of three full-time faculty members who have not been replaced. The department hired one full-time faculty on a one-year appointment but has relied on a varying number of temporary adjuncts to cover the remaining courses. For AY 2015-16, the department has hired three lecturers, each for a three-year term (with satisfactory performance).</p>
			<p>The Department of Manufacturing and Engineering Technology</p>

15.06	Industrial Production Technologies/ Technicians	86%	uses adjuncts to teach two high-enrollment courses: MET 3700 and MET 3710. These courses in particular have seen increased demand due to their being part of the BSET curriculum, in which enrollment has significantly increased, and to increased interest by business students. In addition, the department chair was given release time for preparation of the ABET self-study, and an adjunct was hired to cover the released courses.
19.01	Family and Consumer Sciences/ Human Sciences, General	97%	In the Fall 2014 semester, the School of Human Ecology for the first time participated in the Provost's initiative to standardize teaching loads across campus, reducing the number of hours taught by full-time faculty. The School is accredited by three different external organizations across six different concentrations, requiring a very diverse curriculum and specialized instruction, often requiring employment of highly-qualified part-time faculty. There has been a doubling of enrollment over a three-year period in one concentration (Child Development and Family Relations), requiring additional course sections in that concentration. In Fall 2014, the school hired two full-time Lecturers to replace two lines formerly considered part-time. For AY 2015-16, the two lecturer positions have been rehired, each for a three-year term (with satisfactory

			performance), and an instructor has been hired for a one-year term. Since an internal candidate was appointed Dean, the School will request an additional line to cover her course load.
31.05	Health and Physical Education/ Fitness	84%	The Department of Exercise Science, Physical Education & Wellness (EXPW) offers six diverse concentrations that require a variety of specialized classes. Undergraduate student enrollment continues to rise, creating the need for additional sections of many departmental 'core' classes as well as classes required for multiple concentrations. This leads to need to hire qualified adjunct instructors to teach the added sections to accommodate student demand. Highly qualified adjunct instructors are sought out to keep with the rigorous expectations of EXPW courses. Some courses are offered online, and on-campus delivery class schedules have been modified to facilitate hiring the best, most qualified adjunct instructors possible. For example, a regularly scheduled late morning or early afternoon class is being taught in late afternoon so that the qualified instructor can teach for us after his public school teaching duties end. Because of specializations, many adjunct instructors teach only one class (3 hours), which results in a higher number of adjunct faculty. The high number of adjunct faculty also

			comes to help alleviate overload teaching duties of full-time faculty as well as to offer courses in a manner to facilitate timely graduation of students. The department has hired an additional full-time tenure-track faculty member starting in Fall 2015.
50.09	Music	77%	A significant number of non-music majors take courses in music to satisfy general education requirements. This greatly increases student credit hours generated in the Department of Music. These required general education courses are mostly taught by adjunct faculty. For AY 2015-16, the department has hired a full-time tenure-track faculty member, who had previously been in a temporary position.
52.02	Business Administration, Management and Operations	62%	The higher than average use of adjunct professors is due to the retirement of one full-time professor, and to two full-time faculty on leaves of absence. Both of these are temporary problems; the department received approval to search for a replacement for the retired faculty member, and the faculty members on leave are expected to return in fall semester. There are also two full-time faculty from the department who are serving as Associate Deans, and their accompanying release times are covered by adjunct faculty. For AY 2015-16, one new full-time tenure-track faculty member has been hired, and an instructor has been hired for a one-

The explanations and plans in Table 5 demonstrate that TTU uses the Delaware study benchmarking results to identify and accommodate academic disciplines needing additional full-time faculty.

Ongoing internal reviews. In addition to external reviews and benchmarking, the adequacy of full-time faculty numbers to ensure quality programs receives ongoing internal assessment by the Office of the Provost. In particular, when a faculty vacancy occurs due to retirement or an internal move, the vacated faculty position is evaluated for reassignment with respect to faculty needs among all programs on campus to support the University mission. The Provost has established procedures for replacing faculty [17][18]. For example, in response to enrollment growth and an increased University emphasis on the research/scholarship/creative activity mission, hiring of new tenure-track faculty and department chairpersons was substantially increased in AY 2013-14 with 53 hires.





Additional searches have been conducted or are underway for AY 2015-16 [19]. One million dollars was allocated to hire temporary faculty for programs with short-term needs [20]. For the academic programs listed in Table 1, full-time faculty taught 84.2% of the scheduled course hours during the Fall 2014 and Spring 2015 semesters, which indicates that the number of full-time faculty is reasonable and adequate.











Furthermore, the Provost, in collaboration with the academic deans, identifies other personnel needs to support the academic programs. During 2014, an additional 15 full-time professional advisors were hired for the Student Success Centers that exist in the various colleges [20]. These professional advisors answer student questions about degree programs and offer guidance on curriculum and course registration, primarily for lower-division students. The addition of these advisors should enable the full-time faculty to have more time for career and research and for advising of upper-division students.

Conclusion

TTU has developed and follows a strategic plan that includes consideration of maintaining an adequate number of faculty to meet the University mission; adhering to documented policies for faculty workload planning and faculty responsibility for program oversight; regularly examining faculty numbers and workload by program; and engaging in periodic external and ongoing internal reviews that include consideration of faculty number adequacy for each program or discipline. These processes ensure that the number of full-time faculty members is adequate to support the TTU mission and to safeguard the quality and integrity of each academic program, thus demonstrating compliance with Core Requirement 2.8.

Sources

-  [01] TTU Definition of Faculty
-  [02] TBR Definition of Faculty
-  [03] TBR Policy on Faculty Appointments at Universities
-  [04] Faculty Appointments
-  [05] CHEA Report on An Examination of the Changing Faculty 2013
-  [06] Percentages of Faculty and Course Hours by Category
-  [07] TTU Mission and Vision
-  [08] Flight Plan Focus Areas and Key Priorities
-  [09] Academic Faculty Roles and Responsibilities
-  [10] Agreement on Responsibilities Rev_Fall_2010

-  [11] Faculty Handbook General Personnel Policy
-  [12] Faculty Absence and the Meeting of Classes
-  [13] Outside Employment and Extra Compensation
-  [14] 2013_14 Institutional Effectiveness Report Mechanical Engineering BS
-  [15] Excerpt of Minutes from Computer Science Faculty Meeting on 3_4_14
-  [16] TBR Academic Audit Overview_2013_14
-  [17] Procedures for Replacement of Faculty
-  [18] Personnel Requests for March 2015 Proposed Budget
-  [19] Provost October_2014 Letter
-  [20] Academic Affairs_AY_2013_14_End of the Year Statement