

To: Lehigh University Faculty  
From: Prof. Art King, Secretary to the Faculty  
3/11/08

Re: Addendum to Faculty meeting minutes of December 10, 2007

As part of the Graduate Committee Motions for this faculty meeting, the College of Education, Education and Human Services Department, the following course proposals had been included in the posted materials, were moved by the Chair of the GRC, Prof. John Smith, and were approved by a vote of the Faculty. They were left out of the end materials inadvertently when the December 10, 2007 meeting minutes were posted.

These College of Education proposed new courses and curriculum were passed and are listed on the following pages:

TLT 431 Social Studies in Middle Level and High School Education (3)  
TLT 367 Environmental Education (3)  
TLT 408 Development, Classroom Management and Assessment: Elementary (3)  
TLT 409 Development, Classroom Management and Assessment: Secondary (3)  
TLT 474 Budgeting, Maintaining, and Evaluating Technology (3)  
TLT 476 Technology Program Evaluation (3)

Teaching, Learning, and Technology in School Settings concentration of the Learning Sciences and Technology (LST) Doctoral Program.

A handwritten signature in blue ink, appearing to read "Art King".

## College of Education: Education and Human Services Department

### Proposed New Course

#### 1. Proposed new course number and course description (as it will appear in course catalogue):

##### **TLT 431. Social Studies in Middle Level and High School Education (3)**

Secondary curriculum, content, teaching strategies, and instructional materials for the social studies field. Emphasis on organizing content, using appropriate methods, testing and evaluation, and innovations for social studies at the secondary level. Explores textbooks, courses of study, and teacher-made materials.

#### 2. Instructional mode (lecture, recitation, laboratory, seminar, independent study, or other) and number of contact hours per week:

lecture, 3 hour per week (or equivalent).

#### 3. Rationale for proposed new course:

New course formerly taught as a section of TBTE 412. This was the only teaching methods course to have a single description for both elementary and secondary level and then to use a subtitle to make clear which level was taken. Making this change brings into line with other courses offered in Teaching, Learning, and Technology's teacher certification program of study. It also reduces possible confusion.

#### 4. Academic impact on programs affected by new course:

##### **A. Is the proposed course to be cross-listed?**

No

##### **B. Identify any known effects of the proposed new course on other programs at the University.**

None known.

##### **C. If there are known effects, individuals in charge of the affected programs must be consulted about the proposed new course and the following information provided:**

###### **(1) Who was consulted?**

NA

###### **(2) Is the proposed new course acceptable to all other programs affected?**

NA

###### **(3) Will any changes be required in the affected programs? If so, please describe below:**

NA

##### **D. Does the proposed new course affect the University's commitment to diversity in any way? If so, please describe below:**

Not expected to affect diversity in any way.

## 5. Resource Impact

### A. Provide impact statements in the four areas listed below:

#### (1) Library impact statement (attach statement if provided by LTS)

Current journals and library resources seem adequate. Normal process of book purchases will support over time as is typical. Many resources online.

#### (2) Computer impact statement (attach statement if provided by LTS)

Existing technology sufficient. Adds no new burden in terms of technology.

#### (3) Faculty impact statement (how proposed program affects load on existing faculty or requires new faculty)

Course does not require new faculty or hire.

#### (4) Facilities impact statement (how proposed program affects load on existing facilities or requires new facilities)

No impact on facilities. Part of normal teaching rotation and no new facilities required.

### B. Provide a statement indicating who will assume financial responsibility for any new resources required:

No new resources anticipated.

## College of Education: Education and Human Services Department

### Proposed New Course

#### **1. Proposed new course number and course description (as it will appear in course catalogue):**

##### **TLT 367. Environmental Education (3)**

Introductory environmental education course designed to prepare students to implement environmental education opportunities in formal and non-formal education settings. Topics include history and philosophy of environmental education, environmental laws and regulations, GIS, environmental issues and decision-making, curriculum integration and environmental education teaching methodologies. This is a Web-enhanced course containing both online and fieldwork components.

#### **2. Instructional mode (lecture, recitation, laboratory, seminar, independent study, or other) and number of contact hours per week:**

Hybrid course. Content is delivered through Web-based modules. Off-campus site visits/field work for 5 full days - 40 hours. Content delivery is equivalent to 3 hour per week lecture.

#### **3. Rationale for proposed new course:**

New course formerly taught as Educ 491 Workshop for the past 5 summers. We are simply regularizing this offering. The course is required by the Pennsylvania Department of Education in order for our students to be certified as teachers in environmental education.

#### **4. Academic impact on programs affected by new course:**

##### **A. Is the proposed course to be cross-listed?**

YES. ES 367

##### **B. Identify any known effects of the proposed new course on other programs at the University.**

This course is offered as an elective for the BA in Environmental Studies.

##### **C. If there are known effects, individuals in charge of the affected programs must be consulted about the proposed new course and the following information provided:**

###### **(1) Who was consulted?**

The Environmental Initiative (EI) director, EI steering committee, and EI curriculum sub-committee chair.

###### **(2) Is the proposed new course acceptable to all other programs affected?**

Yes.

###### **(3) Will any changes be required in the affected programs? If so, please describe below:**

No.

**D. Does the proposed new course affect the University's commitment to diversity in any way?  
If so, please describe below:**

Not expected to affect diversity in any way.

## **5. Resource Impact**

**A. Provide impact statements in the four areas listed below:**

**(1) Library impact statement** (attach statement if provided by LTS)

Current journals and library resources seem adequate. Normal process of book purchases will support over time as is typical. Many resources online.

**(2) Computer impact statement** (attach statement if provided by LTS)

Existing technology sufficient. Adds no new burden in terms of technology.

**(3) Faculty impact statement** (how proposed program affects load on existing faculty or requires new faculty)

Course does not require new faculty or hire.

**(4) Facilities impact statement** (how proposed program affects load on existing facilities or requires new facilities)

No impact on facilities. Part of normal teaching rotation and no new facilities required.

**B. Provide a statement indicating who will assume financial responsibility for any new resources required:**

No new resources anticipated.

## College of Education: Education and Human Services Department

### Proposed New Course

#### 1. Proposed new course number and course description (as it will appear in course catalogue):

##### **TLT 408. Development, Classroom Management and Assessment: Elementary (3)**

Classroom strategies and techniques to provide an effective elementary classroom setting are highlighted. Emphasis on classroom organization to facilitate instruction, establishing rules and procedures, and conducting formative and summative assessments in elementary classrooms.

##### **TLT 409. Development, Classroom Management and Assessment: Secondary (3)**

Classroom strategies and techniques to provide an effective secondary classroom setting are highlighted. Emphasis on classroom organization to facilitate instruction, establishing rules and procedures, and conducting formative and summative assessments in secondary classrooms.

#### 2. Instructional mode (lecture, recitation, laboratory, seminar, independent study, or other) and number of contact hours per week:

lecture, 3 hour per week (or equivalent).

#### 3. Rationale for proposed new course:

New courses formerly taught as sections of Educ 491 Workshop. We are simply regularizing this offering. These two courses are required by the Pennsylvania Department of Education in order for our students to be certified as teachers at elementary and secondary level.

#### 4. Academic impact on programs affected by new course:

##### **A. Is the proposed course to be cross-listed?**

No

##### **B. Identify any known effects of the proposed new course on other programs at the University.**

None known.

##### **C. If there are known effects, individuals in charge of the affected programs must be consulted about the proposed new course and the following information provided:**

###### **(1) Who was consulted?**

NA

###### **(2) Is the proposed new course acceptable to all other programs affected?**

NA

###### **(3) Will any changes be required in the affected programs? If so, please describe below:**

NA

##### **D. Does the proposed new course affect the University's commitment to diversity in any way? If so, please describe below:**

Not expected to affect diversity in any way.

## 5. Resource Impact

### A. Provide impact statements in the four areas listed below:

#### (1) Library impact statement (attach statement if provided by LTS)

Current journals and library resources seem adequate. Normal process of book purchases will support over time as is typical. Many resources online.

#### (2) Computer impact statement (attach statement if provided by LTS)

Existing technology sufficient. Adds no new burden in terms of technology.

#### (3) Faculty impact statement (how proposed program affects load on existing faculty or requires new faculty)

Course does not require new faculty or hire.

#### (4) Facilities impact statement (how proposed program affects load on existing facilities or requires new facilities)

No impact on facilities. Part of normal teaching rotation and no new facilities required.

### B. Provide a statement indicating who will assume financial responsibility for any new resources required:

No new resources anticipated.

**College of Education: Education and Human Services Department**

**Proposed New Course**

**1. Proposed new course number and course description (as it will appear in course catalogue):**

**TLT 474. Budgeting, Maintaining, and Evaluating Technology (3)**

Generating budgets for technology implementation, planning for maintenance and continuity in technology services, evaluating the effectiveness and impact of technology implementations.

**2. Instructional mode (lecture, recitation, laboratory, seminar, independent study, or other) and number of contact hours per week:**

Lecture, 3 hour per week (or equivalent)

**3. Rationale for proposed new course:**

This is part of enhancing the Instructional Technology masters program. As our student body has changed a bit, we need to address the need for a course on how technology coordinators handle typical responsibilities of their duties.

**4. Academic impact on programs affected by new course:**

**A. Is the proposed course to be cross-listed?**

NO

**B. Identify any known effects of the proposed new course on other programs at the University.**

None known.

**C. If there are known effects, individuals in charge of the affected programs must be consulted about the proposed new course and the following information provided:**

**(1) Who was consulted?**

NA

**(2) Is the proposed new course acceptable to all other programs affected?**

NA

**(3) Will any changes be required in the affected programs? If so, please describe below:**

NA

**D. Does the proposed new course affect the University's commitment to diversity in any way? If so, please describe below:**

Not expected to affect diversity in any way.

## 5. Resource Impact

### A. Provide impact statements in the four areas listed below:

#### (1) Library impact statement (attach statement if provided by LTS)

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#### (3) Faculty impact statement (how proposed program affects load on existing faculty or requires new faculty)

Course does not require new faculty or hire.

#### (4) Facilities impact statement (how proposed program affects load on existing facilities or requires new facilities)

No impact on facilities. Part of normal teaching rotation and no new facilities required.

### B. Provide a statement indicating who will assume financial responsibility for any new resources required:

No new resources anticipated.

## College of Education: Education and Human Services Department

### Proposed New Course

#### 1. Proposed new course number and course description (as it will appear in course catalogue):

##### **TLT 476. Technology Program Evaluation (3)**

Techniques for evaluating technology implementations. Focus on instrumentation, data collection and analysis, drawing conclusions from data sets, and preparing reports for funders.

#### 2. Instructional mode (lecture, recitation, laboratory, seminar, independent study, or other) and number of contact hours per week:

Lecture, 3 hour per week (or equivalent)

#### 3. Rationale for proposed new course:

This is part of enhancing the Instructional Technology masters program and the Learning Sciences and Technology doctoral program. Both groups of students may be faced with conducting technology evaluations, particularly the latter group which may do so as dissertation work.

#### 4. Academic impact on programs affected by new course:

##### **A. Is the proposed course to be cross-listed?**

NO

##### **B. Identify any known effects of the proposed new course on other programs at the University.**

None known.

##### **C. If there are known effects, individuals in charge of the affected programs must be consulted about the proposed new course and the following information provided:**

###### **(1) Who was consulted?**

NA

###### **(2) Is the proposed new course acceptable to all other programs affected?**

NA

###### **(3) Will any changes be required in the affected programs? If so, please describe below:**

NA

##### **D. Does the proposed new course affect the University's commitment to diversity in any way? If so, please describe below:**

Not expected to affect diversity in any way.

## 5. Resource Impact

### A. Provide impact statements in the four areas listed below:

#### (1) Library impact statement (attach statement if provided by LTS)

Current journals and library resources seem adequate. Normal process of book purchases will support over time as is typical. Many resources online.

#### (2) Computer impact statement (attach statement if provided by LTS)

Existing technology sufficient. Adds no new burden in terms of technology.

#### (3) Faculty impact statement (how proposed program affects load on existing faculty or requires new faculty)

Course does not require new faculty or hire.

#### (4) Facilities impact statement (how proposed program affects load on existing facilities or requires new facilities)

No impact on facilities. Part of normal teaching rotation and no new facilities required.

### B. Provide a statement indicating who will assume financial responsibility for any new resources required:

No new resources anticipated.

**GRC Submission**  
**College of Education:**  
**Teaching, Learning, and Technology Program**

**Proposed Changes in Teaching, Learning and Technology in School Settings**  
**concentration of the Learning Sciences and Technology (LST) Doctoral Program**

**1. Name and summary of current program:**

**Learning Sciences and Technology doctoral concentration in Teaching Learning and Technology in School Settings:** a 72 credit (post-bachelor's) or 48 credit (post-master's) doctoral program.

**2. Proposed program changes (as they will appear in the catalog):**

See bottom on next page for existing approved degree course requirements and page 3 for the proposed new version.

**3. Description of proposed change(s):**

- Drop "in School Settings" from the name of the concentration.
- Drop nine credits of required courses from the cross-discipline credits list (post-bachelor's) and replace with additional elective credits from cross-disciplines list (now 21 credits instead of 12)
- Replace 3 credits of Field experience courses with 3 credits of TLT 406. Tools for Teaching and Learning (post-master's).
- Replace 3 credits of "Elective from cross-discipline courses list" with 3 credits of TLT 458. Website and Resource Development for Learning (for both post-bachelor's and post-master's)
- Drop EdT 415 as an alternative to TBTE 415 (now TLT 450) for both post-bachelor's and post-master's.
- Modify course listing to show new prefixes, changed course numbers, and correct titles.

**4. Rationale for proposed change(s):**

The TBTE and EdT programs merged in 2006 and we have temporarily suspended admission to the Instructional Design and Development concentration of the LST. Instead we are admitting to the single TLT concentration. This means we needed to broaden what it covers and to modify its requirements to suit the broader audience of applicants. As part of the merger—which changed the name of the unified program to Teaching, Learning, and Technology—we have changed the prefix from two different prefixes (TBTE and EdT) to a single prefix (TLT) and have renumbered courses to assure they are properly aligned with no duplicated numbers. We also cleaned up the titles and descriptions of the now-renumbered courses. The proposed revised program for this concentration reflects these changes.

**5. Academic Impact Statement:**

**a. Is this proposed program change interdisciplinary?**

No, since it only affects an LST concentration in the College of Education

**b. Identify any known effects of the proposed program change on other programs at the University.**

None

**c. If there are known effects, individuals in charge of the affected programs must be consulted about the proposed program change and the following information provided:**

**(1) Who was consulted?**

NA

**(2) Is the proposed program change acceptable to the affected programs?**

NA

**(3) Will any changes be required in the affected programs? If so, describe.**

NA

**d. Identify any known effects of the proposed program change on the University's commitment to diversity.**

NONE.

**6. Resource Impact Statement:**

**a. Provide each of the following:**

**(1) Library impact statement**

No changes. Existing library allocations already cover sufficient normal increments to holdings. We presently subscribe to appropriate journals.

**(2) Computer impact statement**

No change from existing.

**(3) Faculty impact statement**

No impact, description changes only

**(4) Facilities impact statement**

No changes.

**b. Provide a statement indicating who will assume financial responsibility for any new resources required:**

No anticipated need for additional resources.

**Existing Approved Program of Study:**

<i>Teaching, Learning, and Technology in School Settings</i> concentration course requirements:		
	<b>TL&amp;T cross-discipline credits (24)</b>	<b>TL&amp;T concentration credits (33)</b>
For those admitted with a bachelor's degree	TBTE 406. Tools for K-12 Teaching & Learning (3)	TBTE 480. Curriculum Design and Innovation. (3)
	TBTE 407. Designing for K-12 Teaching and Learning (3)	Statistics course (Educ 409, 410, 411, or equivalent) (3)
	Field experience (Educ 493, 494, or 495); (6 total) <i>[May be reduced or waived if prior experience in schools warrants, freeing hours for additional cross-discipline coursework.]</i>	Research methods / Statistics course elective (3)
		TBTE 415. Technology in School Settings: [Subtitle] <u>or</u> EdT 415. Topics in Educational Technology: [Subtitle] (6 total)
	12 credits from the cross-discipline course list	Elective from cross-discipline course list (3)
	Field experience (Educ 493, 494, or 495), additional topic seminars (TBTE 415 or EdT 415), Qualifying Project (Educ 486), Dissertation proposal or maintenance of candidacy, or electives (15 total)	
For those admitted with a master's degree	Field experience (Educ 493, 494, or 495); (3) <i>[May be waived if prior experience in schools warrants, freeing hours for additional cross-discipline coursework.]</i>	TBTE 480. Curriculum Design and Innovation. (3)
		Statistics course (Educ 409, 410, 411, or equivalent) (3)
		Research methods / Statistics course elective (3)
		TBTE 415. Technology in School Settings: [Subtitle] <u>or</u> EdT 415. Topics in Educational Technology: [Subtitle] (3 total)
	6 credits from the cross-discipline course list	Elective from cross-discipline course list (3)
	Field experience (Educ 493, 494, or 495), additional topic seminars (TBTE 415 or EdT 415), Qualifying Project (Educ 486), Dissertation proposal or maintenance of candidacy, or elective (9 total)	

**Proposed Revised Program of Study:**

*Teaching, Learning, and Technology* concentration course requirements:

For those admitted with a BACHELOR'S degree (72 credits)		
LST Foundational Coursework (15)	TL&T cross-discipline credits (24)	TL&T concentration credits (33)
LST 401. Overview of LST (3)	TLT 406. Tools for K-12 Teaching & Learning (3)	TLT 480. Curriculum Design and Innovation. (3)
LST 403. Designing Learning Environments (3)	21 credits from the cross-discipline course list	Statistics course (Educ 409, 410, 411, or equivalent) (3)
Educ 405. Qualitative Research Methods (3)		Research methods / Statistics course elective (3)
Educ 408. Introduction to Statistics [or equivalent] (3)		TLT 450. Technology in School Settings: [Subtitle] (6 total)
Educ 471. (CPsy 471) Diversity and Multicultural Issues [or equivalent] (3)		TLT 458. Website and Resource Development for Learning (3)
		Field experience (Educ 493, 494, or 495), additional topic seminars (TLT 450), Qualifying Project (Educ 486), Dissertation proposal or maintenance of candidacy, or electives (15 total)

For those admitted with a MASTER'S degree (48 credits)		
LST Foundational Coursework (15)	TL&T cross-discipline credits (9)	TL&T concentration credits (24)
LST 401. Overview of LST (3)	TLT 406. Tools for K-12 Teaching & Learning (3)	TLT 480. Curriculum Design and Innovation. (3)
LST 403. Designing Learning Environments (3)	6 credits from the cross-discipline course list	Statistics course (Educ 409, 410, 411, or equivalent) (3)
Educ 405. Qualitative Research Methods (3)		Research methods / Statistics course elective (3)
Educ 408. Introduction to Statistics [or equivalent] (3)		TLT 450. Technology in School Settings: [Subtitle] (3 total)
Educ 471. (CPsy 471) Diversity and Multicultural Issues [or equivalent] (3)		TLT 458. Website and Resource Development for Learning (3)
		Field experience (Educ 493, 494, or 495), additional topic seminars (TLT 450), Qualifying Project (Educ 486), Dissertation proposal or maintenance of candidacy, or electives (9 total)

**NOTE:** There are **no changes** in the 15 credits of LST Foundational coursework. These credits were not listed as part of the previous tables (shown on previous page), but have been added to the tables here as the left-most column to enhance clarity. This is a layout change, not a curriculum change.

## LST Courses

### LST 401. Overview of Learning Sciences and Technology (3)

Foundations and key concepts in Learning Sciences and Technology. Cognition and brain-based research with a focus on technology's role in learning.

### LST 403. Designing Learning Environments (3) [Add missing word in title. Add prerequisite.]

Social, cognitive, and physical factors in teaching and learning. Systems theory applied to learning settings. Special emphasis on motivational theories. *Prerequisite:* LST 401 or POI.

### LST 420. Critical Reading and Writing (3) [Was EdT 482. New title.]

Using literature to build persuasive written arguments. Searching and identifying promising sources, distilling research findings, synthesizing literature to support an argument, and organizing written materials to enhance persuasiveness. Suited to those writing qualifying projects, dissertation proposals, dissertations, funding proposals, conference proposals, and journal articles.

## Undergraduate Courses

### TLT 312. Classroom Practice (1-3) [Prefix change only.]

Experience in elementary and secondary classrooms as related to theories of child and adolescent development, classroom didactics, and philosophies of education. Problem-centered discussion and observation. May be repeated for credit. *Prerequisite:* consent of the program director.

### TLT 314. Seminar in Elementary and Secondary Education (3) [Prefix change only.]

Critical analysis and discussion of classroom instructional practices based on experiences of participants as they engage in teaching experiences. *Prerequisite:* consent of the program director.

### TLT 367. Environmental Education (3) [New course]

Introductory environmental education course designed to prepare students to implement environmental education opportunities in formal and non-formal education settings. Topics include history and philosophy of environmental education, environmental laws and regulations, GIS, environmental issues and decision-making, curriculum integration and environmental education teaching methodologies. This is a Web-enhanced course containing both online and fieldwork components.

### TLT 391. Workshops (1-3) [Prefix change only.]

Cooperative study of current educational problems. Provides elementary, secondary, and special education teachers an opportunity to work at their own teaching levels and in their own fields. Limited to six credits during a summer session but the student may register for more than one workshop provided there is no duplication in subject matter.

### TLT 394. Special Topics in Education: (with subtitle) (1-3) [Prefix change only.]

Examination of a topic of research or professional interest in education. Subtitle will vary. May be repeated for credit as subtitle varies.

## Foundational Courses

### EdT 401. Foundations of Instructional Technology (3) [DROP.]

History and overview of the field with consideration of key learning theories and principles that guide designers and developers. Identification of prominent figures and organizations, key issues and terms, and useful resources in the field. Consideration of forces affecting adoption of innovation with a focus on future directions in teaching and learning with technology.

### TBTE 403. Child Development (3) [DROP.]

A study of physical, intellectual, emotional and social aspects of child development as they relate to the elementary schools.

### TBTE 404. Youth in Society (3) [DROP.]

Social development, characteristics, and problems of adolescents and young adults. Impact of relationships with sibling, peers, adults, subcultures, in the context of changing institutions and values.

### TLT 405. Introduction to Testing and Evaluation (3) [Prefix change only.]

Construction and evaluation of the teacher-made test. Selection of published tests and interpretation of individual and group results. Use and misuse of tests in assessing achievement.

### TLT 406. Tools for Teaching and Learning (3) [Prefix change, Modify course title.]

Application of technology in school-based instructional settings. This course addresses the use of technology tools and resources to enhance and manage learning. Students will demonstrate skills in design and development of Web sites, evaluation and use of educational software, production and integration of digital media, and other key competencies.

### TLT 407. Designing for Teaching and Learning (3) [Prefix change only. Modify course title.]

Theoretical, philosophical and curricular foundations of instruction. This course explores theories of learning and their application, implications for the use of technology, and standards-based education. Special emphasis on planning, developing and assessing instruction. *Prerequisite:* Successful prior completion of TBTE 406.

### EdT 408. Advanced Learning Theories Applied to Instructional Technology [Subtitle] (3) [DROP.]

Advanced seminar examining theories of socio-historical psychology and their application to educational technology. Topics vary: for example, Vygotsky's Theories Applied to Educational Technology, Communication Theories Applied to Educational Technologies, Group Dynamics Theories Applied to Educational Technologies. *Prerequisite:* EdT 401. May be repeated for credit under different topic.

### TLT 408. Development, Classroom Management and Assessment: Elementary (3) [New course formerly taught as Educ 491 Workshop]

Classroom strategies and techniques to provide an effective elementary classroom setting are highlighted. Emphasis on classroom organization to facilitate instruction, establishing rules and procedures, and conducting formative and summative assessments in elementary classrooms.

### TLT 409. Development, Classroom Management and Assessment: Secondary (3) [New course formerly taught as Educ 491 Workshop]

Classroom strategies and techniques to provide an effective secondary classroom setting are highlighted. Emphasis on classroom organization to facilitate instruction, establishing rules and procedures, and conducting formative and summative assessments in secondary classrooms.

## Teaching Methods Courses

### **TLT 410. The Writing Process (3) [Prefix change only.]**

Developmental characteristics of children's writing and relationships among writing, spelling and reading. Predictors of writing achievement, teaching strategies and activities, and evaluation schemes will be emphasized, K-12.

### **TLT 412. Social Studies in Elementary Education (3) [Prefix change. Title and description change.]**

Elementary curriculum, content, teaching strategies, and instructional materials of the social studies field. Emphasis on organizing content, using appropriate methods, testing and evaluation, and innovations for social studies at the elementary level. Examines textbooks, courses of study, and teacher-made materials.

### **TLT 420. Reading in Elementary Education (3) [Prefix change only.]**

Principles of teaching reading in elementary schools. Selection of appropriate materials, methods, and techniques. Beginning reading instruction and the development of strategies for teaching vocabulary and comprehension in narrative and expository texts.

### **TLT 422. Language Arts in Elementary Education (3) [Prefix change only.]**

Principles of language learning and the development of communication skills in elementary schools. Methods of teaching listening, speaking, handwriting, spelling, punctuation, and grammar. Selection of appropriate materials and textbooks.

### **TLT 424. Children's Literature in Elementary Education (3) [Prefix change only.]**

Role of literature in the instructional program of the elementary schools. Use of trade books for individualized instruction in reading, language arts, mathematics, science, and social studies.

### **TLT 426. Science in Elementary Education (3) [Prefix change only.]**

Principles of the elementary science program. Demonstrations and discussions of appropriate materials and techniques for teaching science concepts to elementary school students. Enrollment limited to available lab space.

### **TLT 428. Mathematics in Elementary Education (3) [Prefix change only.]**

Mathematical skills and concepts for the elementary school program. Sets, systems of numeration, experience with numbers, operations with numbers, number concepts and numerals, and elements of geometry.

### **TLT 430. Programs for Gifted and Talented (3) [Was TBTE 466.]**

Characteristics of gifted children; teaching gifted children; programs for the gifted in elementary and secondary schools.

### **TLT 431. Social Studies in Middle Level and High School Education (3) [New course. Formerly taught as section of TBTE 412.]**

Secondary curriculum, content, teaching strategies, and instructional materials for the social studies field. Emphasis on organizing content, using appropriate methods, testing and evaluation, and innovations for social studies at the secondary level. Explores textbooks, courses of study, and teacher-made materials.

### **TLT 432. Reading and Critical Thinking in Middle Level and High School Education (3) [Was TBTE 440.]**

Focuses on expository reading development in content areas such as language arts, mathematics, science and social studies. Practical teaching strategies in critical areas, such as comprehension and study skills. Review of research and methods for improving reading development of students.

### **TLT 434. English in Middle Level and High School Education (3) [Was TBTE 442.]**

Curricula, philosophy, methods, strategies, and materials in the teaching of English. Literature, genres, and the nature of text and text differences. Critical analysis and drawing inferences from narrative text and poetry. Applications of technology and assessment principles.

### **TLT 436. Science in Middle Level and High School Education (3) [Was TBTE 446.]**

Curricula, philosophy, methodology, strategies and safety in the teaching of middle and high school science. Emphasis on laboratory and instructional technology, at-risk and underrepresented students and current models of science education. *Permission of instructor.* Enrollment limited to available lab space.

### **TLT 438. Mathematics in Middle Level and High School Education (3) [Was TBTE 448.]**

Curricula, instructional activities, and manipulative aids applicable to mathematics courses in middle level and high schools. Teaching strategies and materials appropriate for teaching mathematics will be emphasized.

### **TLT 440. Pre-professional Seminar (3) [Was TBTE 461. New title]**

Study, directed observation of, and initial practice in the various phases of teaching in a laboratory-demonstration school or in area elementary and secondary schools. *Prerequisite: consent of the program director.*

### **TLT 442. Intern Teaching (2-3) [Was TBTE 463.]**

Intensive practice in the application of principles of teaching. Supervision is provided by the cooperating school and by the university. *Prerequisite: consent of the program director.*

### **TLT 444. Intern Teaching Seminar (3) [Was TBTE 464.]**

Critical analysis and discussion of classroom instructional practices. Discussion and illustration based on experience of participants as they engage in intern teaching. *Prerequisite: consent of the program director.*

## Instructional Technology Courses

### **EdT 415. Topics in Educational Technology: (with subtitle) (3) [DROP.]**

Current issues and practices related to the use or adoption of educational technology. Topics will vary (for example, The Role of Educational Technology in Teaching Persons with Special Needs; Educational Technology in the Workplace; Managing Educational Technology Product Development). May be repeated for credit as topic varies.

### **TLT 450. Technology in School Settings: [Subtitle] (1-3) [Was TBTE 415.]**

Focused examination of problems, key issues, and approaches to the use of technology in school settings. Topics vary (for example, Technology's Role in Facilitating School Restructuring; Teaching for Brain-based Learning; Enhancing Gifted Education through Technology). May be repeated for credit as topic varies.

**TLT 452. The Systematic Design of Instruction (3) [Was EdT 422. Shorten title. Change prerequisite]**

Introductory exploration of instructional design models and philosophies and their implications for teaching and learning using technology. Heavy focus on instructional message design. Applies perception theory, communication theory, and learning theory to the design of instructional media. Students in this course design instructional materials employing the theories and guidelines explored. *Pre/co-requisite: LST 401.*

**TLT 454. Applied Instructional and Interface Design Principles (3) [Was EdT 425. Shorten title.]**

Exploration and application of design models for learning. Special emphasis on graphical user interfaces in education and training. *Prerequisite: TLT 452.*

**TLT 456. Advanced Instructional Design (3) [Was EdT 428. Shorten title.]**

Advanced instructional design and interface issues. Design of instructional environments, selection of instructional metaphors, impact of the interface on the user, and demands of designing for newer learning technologies. *Prerequisite: TLT 454.*

**TLT 458. Website and Resource Development for Learning (3) [Was EdT 432. Shorten title. Add prerequisite.]**

Introduction to resource development and HTML editing tools used in the creation of eLearning Websites. Covers fundamentals of: HTML and commercial Web-creation software packages; scanners and digital video cameras; and use of digital resource creation-and-manipulation programs. *No prerequisites. Prerequisite TLT 406 or POI.*

**TLT 460. Interactive Multimedia Programming for Learning (3) [Was EdT 435. Shorten title.]**

Introduction to creating educational applications utilizing sound, video, graphics and other digital resources. *Prerequisite: TLT 458.*

**TLT 462. Advanced Development of Instructional Resources and Technologies: [Subtitle] (3) [Was EdT 438. Shorten title.]**

Focus on using more sophisticated Website and digital resource development-and-manipulation tools to create multimedia learning materials. Topics will vary (for example, Database-Driven Web Development; Assistive Devices for Special Populations; Programming Hand-held Devices; Audio Resource Development; Media Production for Instructional Programming). *Prerequisite: TLT 460. May be repeated for credit under different subtitle.*

**EdT 470. Technology Across the Curriculum (3) [DROP]**

Curricular issues related to using technology in various school settings. Technology's varying roles in schools. Emphasis on instructional and curricular concerns and how technology affects educational decisions.

**TLT 470. Integrating Technology in the Classroom (3) [Was EdT 472. New title and description.]**

Planning for integration of instructional technology in individual classrooms. Analysis of available technologies, both hardware and software, and identification of technologies matched to instructional needs. Focus on assessing the impact of technology on student outcomes.

**TBTE 471. School Curriculum (3) [DROP.]**

Curricular innovations. Applications of curricular designs K-12. Subject matter and course design. Integration and importance of the fine arts and physical education in the curriculum.

**TLT 471. Planning for Implementing Technology at the School or District Level (3) [Was EdT 471. New title and description.]**

Logistics of implementing technology for a school or school district. Covers staffing, budgeting, facilities, staff development, and proposal preparation. Students in the course create complete technology plans.

**TBTE 473. Curriculum Construction (3) [DROP.]**

Theoretical models of curriculum design and evaluation. Scope, sequence, articulation, continuity, and balance in designs. Organizing for curriculum planning, development, implementation and change. K-12.

**TLT 474. Budgeting, Maintaining, and Evaluating Technology (3) [New course]**

Generating budgets for technology implementation, planning for maintenance and continuity in technology services, evaluating the effectiveness and impact of technology implementations.

**TLT 476. Technology Program Evaluation (3) [New course]**

Techniques for evaluating technology implementations. Focus on instrumentation, data collection and analysis, drawing conclusions from data sets, and preparing reports for funders.

## Curriculum Courses

**TLT 480. Curricular Design and Innovation (3) [Prefix change only.]**

Curricular models and their features, with a focus on how curricular design promotes learning in K-12 settings. Special emphasis on technology-enabled curricula, designing for brain-based learning, and curriculum's role in innovation.

**EdT 485. Applied Research in Educational Technology (3) [DROP.]**

Approaches and techniques applicable to empirical research studies in educational technology, both quantitative and qualitative. Students design and carry out small-scale investigations of research questions and hypotheses related to educational technology and write up research reports of their findings and conclusions. *Prerequisites: EdT 425 plus Educ 403.*

**EdT 490. Integrating Experience in Instructional Design and Development (3) [DROP.]**

Project-based design and development. Students work in teams to design and develop internal or external instructional technology projects under the direction of a faculty member. *Prerequisites: EdT 425 and EdT 435.*