

### Request for Graduate Course Addition

1. Prepare one paper copy with all signatures and supporting material and forward to the Graduate Council Chair.
2. E-mail one identical PDF copy to the Graduate Council Chair. If attachments included, please merge into a single file.
3. **The Graduate Council cannot process this application until it has received both the PDF copy and the signed hard copy.**

College: Medicine

Dept/Division: Clinical Translational

Alpha Designator/Number: CTS-630

Graded  CR/NC

Contact Person: Darshana Shah, PhD

Phone: 304-691-8639

**NEW COURSE DATA:**

New Course Title: Fundamentals of Team Science

Alpha Designator/Number: 

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Title Abbreviation: 

F	U	N	D	A			O	F		T	E	A	M		S	C	I	E	N	C	E		
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(Limit of 25 characters and spaces)

Course Catalog Description: This course offers practical guidance about how best to engage in team science to pursue complex science questions and work effectively with team members.  
(Limit of 30 words)

Co-requisite(s): None First Term to be Offered: Spring 2017

Prerequisite(s): Consent of instructor Credit Hours: 2

Course(s) being deleted in place of this addition (*must submit course deletion form*): \_\_\_\_\_

Signatures: if disapproved at any level, do not sign. Return to previous signer with recommendation attached.

Dept. Chair/Division Head _____	Date _____
Registrar _____	Date _____
College Curriculum Chair _____	Date _____
Graduate Council Chair _____	Date _____

## Request for Graduate Course Addition - Page 2

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College: Medicine

Department/Division: Clinical Translation Science

Alpha Designator/Number: CTS 630

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Provide complete information regarding the new course addition for each topic listed below. Before routing this form, a complete syllabus also must be attached addressing the items listed on the first page of this form.

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1. FACULTY: Identify by name the faculty in your department/division who may teach this course.

Darshana Shah, PhD

2. DUPLICATION: If a question of possible duplication occurs, attach a copy of the correspondence sent to the appropriate department(s) describing the proposal. Enter "**Not Applicable**" if not applicable.

Not Applicable

3. REQUIRED COURSE: If this course will be required by another department(s), identify it/them by name. Enter "**Not Applicable**" if not applicable.

Not Applicable

4. AGREEMENTS: If there are any agreements required to provide clinical experiences, attach the details and the signed agreement. Enter "**Not Applicable**" if not applicable.

Not Applicable

5. ADDITIONAL RESOURCE REQUIREMENTS: If your department requires additional faculty, equipment, or specialized materials to teach this course, attach an estimate of the time and money required to secure these items. (Note: Approval of this form does not imply approval for additional resources.) Enter "**Not Applicable**" if not applicable.

Not Applicable

6. COURSE OBJECTIVES: (May be submitted as a separate document)

Listed on course syllabus (attached).

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7. COURSE OUTLINE (May be submitted as a separate document)

Listed on course syllabus (attached).

8. SAMPLE TEXT(S) WITH AUTHOR(S) AND PUBLICATION DATES (May be submitted as a separate document)

Listed on course syllabus (attached).

9. EXAMPLE OF INSTRUCTIONAL METHODS (Lecture, lab, internship)

Web based self learning modules, large group discussion, small group discussion

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### 10. EXAMPLE EVALUATION METHODS (CHAPTER, MIDTERM, FINAL, PROJECTS, ETC.)

Homework-readings, and/or written assignments,  
Exam- Problem solving exercise, Team Project

### 11. ADDITIONAL GRADUATE REQUIREMENTS IF LISTED AS AN UNDERGRADUATE/GRADUATE COURSE

Not applicable

### 12. PROVIDE COMPLETE BIBLIOGRAPHY (May be submitted as a separate document)

1. Salas, E. & Lacerenza, C. (2013, July 1). Team training for team science: Improving interdisciplinary collaboration. In H. Valentine (Chair), Workshop on science team dynamics and effectiveness/Education and training for team science. Washington, DC: Institute of Medicine/ National Academy of Sciences. Available at <http://nationalacademies.org/teamscience>.
2. Hall K, Vogel A., Stipelman B., Stokols D., Morgan G., Gehlert S.. A Four-Phase Model of Transdisciplinary Research: Goals, Team Processes, and Strategies. *Translational Behavioral Medicine*. 2012 Dec;2(4).
3. Hall K, Stokols D, Stipelman BA, Vogel AL, Feng A, Masimore B, Morgan G, Moser RP, Marcus SE, and Berrigan D. Assessing the Value of Team Science: A Study Comparing Center- and Investigator-Initiated Grants. *American Journal of Preventive Medicine*. 2012 Feb;42 (2):157-163.
4. Falk-Krzesinski H, Contractor, N., Fiore, S.M., Hall, K.L., Kane, C., Keyton, J., Klein, J.T., Spring, B., Stokols, D., Trochim, W.. Mapping a Research Agenda for the Science of Team Science. *Research Evaluation*. 2011;20:143-156.
5. Falk-Krzesinski, H.J., Börner, K., Contractor, N., Fiore, S.M., Hall, K.L., Keyton, J., Spring, B., Stokols, D., Trochim, W., and Uzzi, B. (2010). Advancing the Science of Team Science. *Clinical and Translational Sciences* 3, 263-266.
6. Börner, K., Contractor, N., Falk-Krzesinski, H.J., Fiore, S.M., Hall, K.L., Keyton, J., Spring, B., Stokols, D., Trochim, W., and Uzzi, B. (2010). A Multi-Level Systems Perspective for the Science of Team Science. *Science Translational Medicine* 2, cm24.

## Request for Graduate Course Addition - Page 5

Please insert in the text box below your course summary information for the Graduate Council agenda. Please enter the information exactly in this way (including headings):

Department:  
Course Number and Title:  
Catalog Description:  
Prerequisites:  
First Term Offered:  
Credit Hours:

Department: Clinical and Translational Science  
Course Number and Title: CTS 630, Fundamentals of Team Science  
Catalog Description: This course offers practical guidance about how best to engage in team science to pursue complex science questions and work effectively with team members.  
Prerequisites: Consent of instructor  
First Term Offered: Spring 2017  
Credit Hours: 2

<b>COURSE TITLE/NUMBER</b>	Fundamentals of Team Science CTS-630
<b>SEMESTER/YEAR</b>	Spring 2017
<b>DAYS/TIME</b>	Two hours /week- Thursday 1-3PM
<b>CREDIT HOURS</b>	2
<b>LOCATION</b>	Appalachian Clinical & Translation Science Institute (ACTSI)
<b>INSTRUCTOR</b>	Darshana Shah, PhD
<b>OFFICE/PHONE</b>	691-8639
<b>E-MAIL</b>	Shah@marshall.edu (email preferred)
<b>OFFICE HOURS</b>	Wednesday 4- 5:30 and by appointment
<b>CFE/UNIVERSITY POLICIES</b>	By enrolling in this course, you agree to the <i>Marshall University Policies</i> , and thus it is essential that you understand them. Please review these at the Academic Affairs website: <a href="http://muwww-new.marshall.edu/academic-affairs/policies/">http://muwww-new.marshall.edu/academic-affairs/policies/</a>

**COURSE DESCRIPTION: FROM CATALOG**

Addressing complex problems in science requires the high degree of cross-disciplinary collaboration, referred to as “Team Science”. This course offers practical guidance about how best to engage in team science to: pursue complex science questions, work effectively with team members, and produce high impact research outcomes that help meet society’s needs.

**STUDENT LEARNING OUTCOMES IDENTIFIED IN THIS COURSE:**

Upon completion of the course, students will:

- (1) Understand the Science of Team Science
- (2) Able to assemble an effective research Team
- (3) Able to launch and lead a functional research Team
- (4) Able to evaluate a Team

<b>COURSE STUDENT LEARNING OUTCOMES</b>	<b>HOW PRACTICED IN THIS COURSE</b>	<b>HOW ASSESSED IN THIS COURSE</b>
Goal 1: Understand the Science of Team Science Objectives: <i>History, Definitions, Evidence</i> <ul style="list-style-type: none"> <li>• Differentiate between multidisciplinary, interdisciplinary, and transdisciplinary research</li> </ul>	Lecture Reading Assignment	Individual Knowledge Tests/ Team knowledge Test- Exam-1 Homework

<p>Goal 2: Assemble an effective Research Team</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• Describe factors that contribute to the success of a scientific team</li> <li>• Discuss factors to consider and steps to take when evaluating others as potential collaborators</li> <li>• Describe factors to consider when deciding whether to join an interdisciplinary research team</li> </ul>	<p>Large &amp; Small group discussion</p>	<p>Online Modules – pre- and post-tests Exam-1</p>
<p>Goal 3: Able to launch and lead a functional Research Team</p> <p>Objectives</p> <ul style="list-style-type: none"> <li>• Learning how to communicate effectively in the sciences and technology</li> <li>• Demonstrate an understanding of how meta-cognitive processes are important for team functioning</li> <li>• Assessing and building personal leadership capabilities</li> </ul>	<p>Lecture Small group exercise</p>	<p>Individual Knowledge Tests/ Team Knowledge Test Exam-2 Homework</p>

<p>Goal 4: Able to evaluate a Team Objectives;</p> <ul style="list-style-type: none"> <li>• Discuss outcome method and tools for team evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Presentation and discussion of interviews with science teams</li> </ul>	<p>Written assignment</p> <ul style="list-style-type: none"> <li>• Formulate a plan to evaluate a scientific team</li> </ul>
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**REQUIRED TEXTS, ADDITIONAL READING, AND OTHER MATERIALS**

<p>No Required Text</p> <p>Readings as assigned</p>
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## RECOMMENDED MATERIALS

### Additional recommended readings/sources:

1. Salas, E. & Lacerenza, C. (2013, July 1). Team training for team science: Improving interdisciplinary collaboration. In H. Valentine (Chair), Workshop on science team dynamics and effectiveness/Education and training for team science. Washington, DC: Institute of Medicine/National Academy of Sciences.  
<http://nationalacademies.org/teamscience>
2. Hall K, Vogel A, Stipelman B, Stokols D, Morgan G, Gehlert S. A Four-Phase Model of Transdisciplinary Research: Goals, Team Processes, and Strategies. Translational Behavioral Medicine. 2012 Dec;2(4).
3. Hall K, Stokols D, Stipelman BA, Vogel AL, Feng A, Masimore B, Morgan G, Moser RP, Marcus SE, and Berrigan D. Assessing the Value of Team Science: A Study Comparing Center- and Investigator-Initiated Grants. American Journal of Preventive Medicine. 2012 Feb;42(2):157-163.
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5. Falk-Krzesinski, H.J., Börner, K., Contractor, N., Fiore, S.M., Hall, K.L., Keyton, J., Spring, B., Stokols, D., Trochim, W., and Uzzi, B. (2010). Advancing the Science of Team Science. Clinical and Translational Sciences 3, 263-266.
6. Börner, K., Contractor, N., Falk-Krzesinski, H.J., Fiore, S.M., Hall, K.L., Keyton, J., Spring, B., Stokols, D., Trochim, W., and Uzzi, B. (2010). A Multi-Level Systems Perspective for the Science of Team Science. Science Translational Medicine 2, cm24.

### EVALUATION:

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<b>Exam-I</b>	<b>30%</b>
<b>Exam-II</b>	<b>30%</b>
<b>Writing Assignment(s)</b>	<b>15%</b>
<b>Team Project</b>	<b>15%</b>

### Grades will be determined by the following scale:

90-100 A  
80-89 B  
70-79 C  
60-69 D  
<60 F

## **ATTENDANCE POLICY**

This class meets weekly. While attendance is not required, the course is designed for students to work in teams, thus students are encouraged to maintain regular attendance.

## ADDITIONAL POLICIES

- 1. Accountable material and preparation.** Class sessions are conducted based on the expectation that students complete all appropriate readings and/or assignments as scheduled. This facilitates better questions, discussion, and learning. Exam and quiz questions may be based on both out-of-class assignments and material presented in class.
- 2. Electronic devices.** Electronic devices (smartphones, PDAs, laptops, etc.) can be a valuable asset in the classroom. However, if used inappropriately, these can be a distraction. Students should utilize these devices in class only for educational purposes, and are requested to be unobtrusive in their use (including silencing cell phone ringers). Please note that social media, “tweeting”, and real time chat are not appropriate in the classroom unless part of a classroom exercise.
- 3. Intellectual property notice:** Many materials used in this class are copyrighted, while others represent content and product of the instructor and/or Marshall University. While students may share notes and engage in discussions regarding their work in the course, recording or distribution of course content is not permitted. Students should enquire of the instructor for clarification regarding exceptions.
- 4. Academic integrity:** Students should refer to the Student Handbook to ensure understanding of policies concerning academic honesty and integrity, including plagiarism and cheating. Unless specified by the instructor, no electronic devices, notes, or other non-approved assistance is permitted during any exam.
- 5. Disability accommodation.** The instructor will endeavor to accommodate students with a disability. It is requested that the student notify the instructor at the earliest possible time regard anticipated assistance which may be required.
- 6. Vigilance.** Students are expected to access their MU e-mail address and MU On-line regularly for information related to the course.
- 7. Missed classes:** If you are absent, it is the student’s responsibility to find out from a classmate what notes, handouts, assignments, or other course material you missed and to make arrangements to receive those.
- 8. Make-up assignments and exams:** Students who miss scheduled exams or assignments may make them up in the event of a University-excused absence or medical emergency. In any other situation, a student may request a make-up, but if the request is granted, such may be a different exam or assignment.
- 9. Office hours:** As posted and by appointment.
- 10. Inclement Weather:** If inclement weather results in class cancellation, students are directed to carefully review posted material posted for that session, as we will endeavor to maintain the planned course schedule, including exams which may include that content.
- 11. Reasonable change with notice.** In order to facilitate unforeseen circumstances, as well as act in the best interest of students and the university, the terms and schedule in this syllabus are subject to prudent change with reasonable notice