



# Tennessee SySTEM Grant Opportunity

**Request for Applications**

**August 2022**

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## **At a Glance**

JFF, in partnership with the Tennessee Department of Education, is pleased to announce an exciting new funding opportunity for Tennessee high schools, postsecondary institutions, and employer partners to design and implement dual enrollment\* work-based courses in science, technology, engineering, and math, with a focus on computer science.

*\*For purposes of this grant, courses will be restricted to dual enrollment only (not dual credit).*

# Acknowledgments

This opportunity is funded under a grant from the U.S. Department of Education, Education Innovation and Research program.

## About JFF

JFF is a national nonprofit that drives transformation in the American workforce and education systems. For nearly 40 years, JFF has led the way in designing innovative and scalable solutions that create access to economic advancement for all. [www.jff.org](http://www.jff.org)

## About the Tennessee Department of Education

Tennessee enrolls approximately 998,000 students and is divided into 147 districts with both significant urban and rural populations. Academically, Tennessee students still perform below the national average, and this is compounded by significant gaps in income and race. The Tennessee Department of Education is dedicated to the goal of dramatically improving student achievement and committed to the belief that children from all backgrounds can succeed when given the opportunities they deserve.

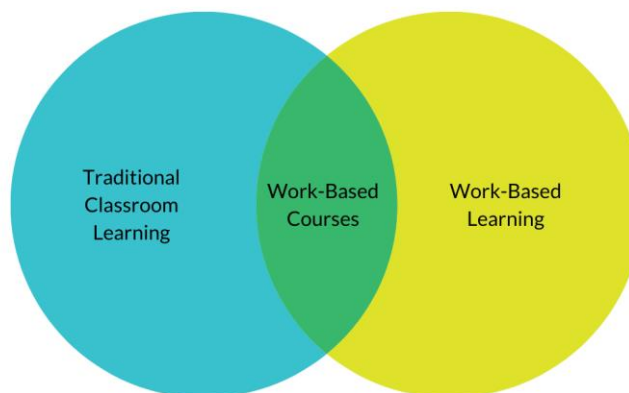
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## Tennessee SySTEM Grant Overview

The [Tennessee SySTEM Grant](#), led by Jobs for the Future (JFF) and in partnership with the Tennessee Department of Education (TDOE), introduces an innovative approach to science, technology, engineering, and math (STEM) pathways, with a focus on computer science (CS) education for grades 11 and 12, by providing local educational agencies (LEAs), postsecondary institutions, and local employers technical assistance and funds to design and implement dual enrollment work-based courses in public high schools across Tennessee. This grant also seeks to support students who identify as Black and/or Latinx, students experiencing poverty, and/or young women of all races through enrollment and persistence in these dual enrollment work-based courses.

In general, work-based courses are a strategy to both **improve and increase work-based learning opportunities and enhance dual enrollment participation**. For purposes of this grant, work-based courses transform STEM and computer science education by incorporating work-based learning strategies into existing dual enrollment courses\*, with 80 percent of the course content happening in the traditional classroom, and 20 percent happening “on the job” with the employer partners at the workplace. As such, dual enrollment work-based courses are highly dependent on strong partnerships between local school districts (secondary), local postsecondary institutions, and local employer partners.



The Tennessee SySTEM grant will do the following for all grant recipients:

- Provide \$45,000 for partners (high school, postsecondary, and employer) to plan and implement a STEM or computer science dual enrollment work-based course, including college tuition costs and/or student compensation for the work-based learning component of the work-based course.
- Provide direct support to all grant partners in the form of technical assistance, training, site visits, and resources from JFF and TDOE throughout the entirety of the grant period.

*\*For purposes of this grant, courses will be restricted to dual enrollment only (not dual credit).*

American Institutes for Research (AIR) is the third-party evaluator that will test the feasibility of dual enrollment work-based courses associated with this grant opportunity. Grant applicants must agree to participate in the following data collection activities:

- Teacher/business partner survey
- Site visits with researchers, which include interviews with teachers and business partners, advisors, and school administration
- Student surveys
- Student focus groups

## Tennessee SySTEM Dual Enrollment Work-Based Course Structure

### Course Design

- Work-based courses for this grant adapt ***existing dual enrollment STEM or computer science courses***. Course modules and objectives remain the same as written in the existing course syllabus.
- Teachers and employers should ***collaborate on the student learning outcomes and course objectives*** in the established dual enrollment syllabus and then determine which are better suited for ***learning in the classroom*** and ***learning at the workplace***.
- The dual enrollment courses withstand the same academic standards and rigor as before adaptation. ***The course content remains the same, the approach to instructional delivery changes.***

For best results with course coordination, planning and overall logistics, we recommend a work-based course model that builds off an existing dual enrollment course that is offered **to high school students only**.\*

This course should also **embed work-based learning** components offered to students and led by an employer partner (example: students enrolled in an IT dual enrollment work-based course work at the school's IT help desk once a week).

*\*We recommend a dual enrollment course that is only offered to high school students to make grading logistics equitable and seamless with the work-based learning integration that college students might not be taking part in.*

## Course Delivery

- At least **20 percent** of the course should be instructed **at the workplace** by an employer instructor. The remaining **80 percent** should be in the traditional classroom. Dual enrollment course credit hours incorporate both the learning happening at the workplace and in the classroom.\*
- While a dual enrollment work-based course can occur in blended-learning classrooms, instruction at the workplace should ideally be **in person with an employer instructor**.
- Students should be able to **identify the connections** between the learning that is happening in the classroom and at the workplace (e.g., applied workplace learning activities such as a learning lab that draws on classroom content but allows for hands-on learning).
- There is **clear, consistent, and open communication** between the teachers and employers before and during course delivery. All partners should **expect to meet regularly** to ensure consistent collaboration on the course model and student success.

*\* The dual enrollment work-based course is one singular course with one grade for the completion of both the learning that happens in the classroom and learning that happens at the workplace (i.e., the dual enrollment credit course hours should be inclusive of the 20 percent learning at the workplace). The course should not be split into two separate courses (i.e., students should not enroll in one dual enrollment STEM course and then enroll in a separate work-based learning course).*

## Course Instructors

- Teachers and employers should be **co-designing, co-delivering, and co-assessing** course content and learning.
- Teachers and employers should share assessments, collaborate on assignments and projects, and **work to inform the practice of one another**.
- Teachers will receive **regular technical assistance** on the work-based course model, including general course design, equitable recruitment strategies, employer engagement, and more.

### Course Implementation Timeline

<b>Fall Semester 2023-24</b>	Dual enrollment work-based course(s)	11 <sup>th</sup> and/or 12 <sup>th</sup> graders
<b>Spring Semester 2023-24</b>	Dual enrollment work-based course(s)	11 <sup>th</sup> and/or 12 <sup>th</sup> graders
<b>Fall Semester 2024-25</b>	Dual enrollment work-based course(s)	11 <sup>th</sup> and/or 12 <sup>th</sup> graders
<b>Spring Semester 2024-25</b>	Dual enrollment work-based course(s)	11 <sup>th</sup> and/or 12 <sup>th</sup> graders

Grant partners will implement at least one dual enrollment work-based course each semester of implementation. Grant partners can choose to implement one or many dual enrollment work-based courses each semester. Grant partners can also choose to implement the same dual enrollment work-based course repeated across semesters or different dual enrollment work-based courses over time.

### Dual Enrollment Work-Based Course Example

Adaptation of Traditional-to-Dual Enrollment Work-Based Course Instructional Model

Sample Community College

Course Name: Introduction to Computers and Coding

This course covers the basic concepts of computer hardware and software, microcomputer systems and workstations, networking and the Internet, and the interdisciplinary science of computing.

### Taught in the Classroom

- ✓ Fundamental concepts of computer science
- ✓ Social, legal, and ethical issues as they pertain to computer usage
- ✓ Calculating logical/rational comparison results
- ✓ Intellectual and practical effects that computer science has in most of the sciences and humanities

### Taught in the Workplace

- ✓ Designing and implementing basic computer programs
- ✓ Creating electronic documents and utilizing computer etiquette in electronic communications
- ✓ Using the computer as a tool to communicate information
- ✓ Demonstrating individual and/or teamwork standards to accomplish given tasks within established time frames

### Taught in Both the Classroom and Workplace

- ✓ How to use basic computer architecture terminology correctly
- ✓ How to execute code examples and explain their outputs
- ✓ How to demonstrate knowledge of memory addressing
- ✓ How to demonstrate knowledge of networking issues

## Partner Roles and Responsibilities

### LEA/Secondary

- Serve as the grant fiscal agent and distribute grant funds to partners to cover expenses during the planning and implementation phases.
- In conjunction with the postsecondary partner, identify the STEM or computer science dual enrollment work-based course that will be redesigned using the work-based course model associated with this grant.
- Recruit and support 11<sup>th</sup>- and 12<sup>th</sup>-grade students, paying particular attention to Black students, Latinx students, students experiencing poverty, and/or young women of all races.
- Remove barriers for student participation, including course tuition and other related course enrollment and completion costs.



- If utilizing concurrent enrollment, identify a qualified high school teacher to teach the 80 percent classroom-instruction portion of the dual enrollment work-based course.
- Facilitate the spaces for the partners to collaborate on the design and implementation of the dual enrollment work-based course.
- Participate in JFF and TDOE technical assistance offerings.

### *Postsecondary*

- Collaborate with the LEA/secondary partner to identify the STEM or computer science dual enrollment course that will be redesigned using the work-based course model associated with this grant. Agree to award college credit using the dual enrollment work-based model grading system (i.e., the dual enrollment credit course hours should be inclusive of the 20 percent learning at the workplace).
- Once the dual enrollment course is identified for redesign, identify a college faculty member to teach the classroom-instruction portion of the dual enrollment work-based course (if not utilizing concurrent enrollment).
- Work with the LEA/secondary partner to implement student assessment models for the course.
- Support students as needed with advising and tutoring and access to other postsecondary support systems.
- Participate in JFF and TDOE technical assistance offerings.

### *Employer*

- Identify an employee that will collaborate with the teacher to co-design the course, select which content is best suited for the workplace, and instruct students by leading the facilitation of work-based learning activities taught in the workplace.
- Facilitate student assessments and feedback sessions on the course.
- Support students as needed through mentoring and extra help with work-based learning activities and connections to learning happening in the classroom.
- Participate in JFF and TDOE technical assistance offerings.

## Terms and Scope of Grants

- There are currently six (6) grant partners funded through this opportunity (cohort 1). A total of 14 proposals will be funded for this upcoming grant cycle (cohort 2). Awardees will have a grant funding period that consists of a planning phase in the semester following the initial awarding and then an implementation phase for two full academic years. Cohort 2 timeline:
  - January-June 2023: planning period
  - School year 2023-24: implementation period
  - School year 2024-25: implementation period
- The funding per proposal available is \$45,000 to cover the full grant period, which will be from January 2023 to June 2025.

## Grants Services and Supports

If awarded, grant recipients will:

- Receive \$45,000 to support planning, salary/stipends, and any dual enrollment (e.g., tuition and textbooks) or work-based learning (e.g., student stipends) expenses.
- Commit to participating in technical assistance provided by JFF and TDOE:
  - Technical assistance will be provided through **biweekly one-to-one consultation calls** during the planning phase and **monthly one-to-one consultation calls** during implementation.
  - Technical assistance will be provided through **monthly cohort office hours**.
  - Technical assistance will be provided through **annual in-person convenings** hosted by TDOE every April.
  - It is expected that grantees **bring the whole team of secondary, postsecondary, and employer partners** to all technical assistance offerings.
- Aim to recruit and enroll at least 60 students during the entirety of the implementation phase, paying particular attention to Black students, Latinx students, students experiencing poverty, and young women of all races.
- Receive a dual enrollment Work-Based Course Blueprint and related tools during the planning phase.

- Become a part of a community of practice with other Tennessee school districts, higher education institutions, and employers designing and delivering work-based courses.
- Be featured, collectively, in publications with a national audience.

## Application Timeline

Key dates for the application timeline are listed below. Applications must be submitted by **October 21, 2022**, at 11:59 p.m. CT.

- Application period: August 15 to October 21, 2022
- [Application office hours](#)\*: August 31 at 4PM ET and September 28 at 4PM ET
- Applicants notified of selection for award: no later than November 4, 2022
- Establish contracts: between November 7 and December 16, 2022
- Start date for contracts: January 1, 2023

*\*JFF will be offering open office hours in August and early September for any prospective grantees to join and learn more about the grant and the application process.*

## Priorities

Applicants for the Tennessee SySTEM Grants will be required to detail the following in their application:

- ✓ Existing partnerships with a local postsecondary institution and an employer partner who are committed to providing instruction, including names of points of contact, how long the partnership has been in place, and examples of past partnership efforts
- ✓ The anticipated number of students who will enroll in the course, aiming for a total of 60 students (please detail circumstances where enrollment may be limited)
- ✓ Name and associated details of the dual enrollment course(s) that will be redesigned into a work-based course
- ✓ Current student recruitment efforts related to STEM and computer science-based programs, including recruitment efforts to support Black students, Latinx students, students experiencing poverty, and young women in particular
- ✓ Academic support and advisement structures for students
- ✓ Preliminary thoughts on splitting the dual enrollment work-based course into 80 percent classroom learning, 20 percent workplace learning

## Recommended Use of Funds

Activity	LEA/Secondary	Postsecondary	Employer
Planning and course design	✓	✓	✓
Salary/stipend for co-teaching dual enrollment work-based course	✓	✓	✓
Salary/stipend for general course coordination	✓	✓	
Dual enrollment costs (e.g., tuition)	✓	✓	
Student stipends for participation in work-based learning	✓		✓

## Important Application, Eligibility, and Award Information

Please see below for additional application, eligibility, and award information.

<b>Application Requirements</b>	<ul style="list-style-type: none"> <li>• Application Submission</li> <li>• Budget</li> <li>• Memorandum of Understanding from any identified partners. Must include postsecondary institution willing to provide college credit through dual enrollment courses and must include employer willing to provide at least 20 percent of instruction to happen at the workplace</li> </ul>
<b>Application Submission</b>	<a href="#">Apply here</a>
<b>Type of Award</b>	Discretionary
<b>Disbursement of Funds</b>	JFF
<b>Total Funds Available</b>	\$900,000
<b>Maximum Funds Awarded Per Eligible Recipient</b>	\$45,000
<b>Estimated Awards</b>	14
<b>Matching Requirement</b>	None
<b>Grant Period</b>	January 3, 2023, to June 30, 2025
<b>Reporting and Accountability</b>	<ul style="list-style-type: none"> <li>• Invoices will include short progress updates</li> <li>• Syllabus showing 80 percent instruction happening in the classroom and 20 percent instruction happening at a workplace for each dual enrollment work-based course implemented</li> </ul>

***Note:** JFF reserves the right to consult with recipients to make amendments to planned uses of funds to ensure allowability from an awarded applicant for approved or allowable expenditures.*

## Selection Process

All applications must meet the eligibility criteria stated above and be submitted in [Formstack](#) by 11:59 p.m. CT on **October 21, 2022**. The selection process is as follows:

1. Each application will be scored using a rubric aligned to the criteria for the key application questions.
2. Each application will be scored collaboratively by JFF and TDOE.
3. A selection committee will review all scored applications to determine final selections.
4. The selection committee may request additional information from applicants in order to make final selections and final award decisions.

All applicants will be notified of their application status by **November 4, 2022**.

## Contact Information

For additional information regarding the Tennessee SySTEM grant, please contact:

Anna O'Connor, director, JFF

[AConnor@jff.org](mailto:AConnor@jff.org)

# Appendix A: Tennessee SySTEM Grant Application

## Eligibility

The following information must be included in the application to be eligible for the grant funding:

1. Fiscal agent, secondary school(s), and partnerships
  - The LEA that will serve as the fiscal agent
  - Identify at least one (1) secondary school, one (1) partnering postsecondary institution, and one (1) partnering local employer, including the names and contacts of each and how long the relationship has been in place for
  - Identify the anticipated total number of students who will be served by the application, aiming for a total of 60 students (please detail circumstances where enrollment may be limited)
2. Lead project coordinator contact information (full name, title, email, phone)
3. Commit to Tennessee SySTEM grant expectations

## Key Application Questions

1. What is the name of the existing STEM or computer science dual enrollment course you will redesign into a dual enrollment work-based course?
  - a. Where is the dual enrollment course located (on college campus, at high school, remote, etc.)?
  - b. How is the dual enrollment course structured (asynchronous, synchronous)?
  - c. Does the dual enrollment course include both college and high school students?
  - d. If your answer is yes above, how will you ensure that college students receive the same course experience (I.e., a course grade for every student enrolled that accounts for 80% of learning in the classroom, 20% in the workplace)\*?
  - e. Please upload the syllabus associated with this dual enrollment course.

*\*Through practice, we have found dual enrollment courses that only enroll high school students to be the easiest to redesign into a WBC course from an equitable grading standpoint.*

2. What are your current student recruitment strategies for STEM, computer science, and/or dual enrollment courses?
3. How will your recruitment strategies shift to support Black students, Latinx students, students experiencing poverty, and young women students enrolling in the course?
4. Please provide an example of how you have successfully partnered with your postsecondary partner.
5. Please provide an example of how you have successfully partnered with your employer partner.
6. What academic support and advisement structures are in place to support students enrolled in this course? What structures do you hope to add to better support and guide students?
7. What preliminary thoughts do you have around how you would structure the course schedule for your students knowing that 80 percent of the course happens “in the classroom” and 20 percent happens “at the workplace”?

## **Budget**

Provide a final budget for the proposed project for the full grant period of January 3, 2023, to June 30, 2025. The funding per proposal available is \$45,000 for the full grant period.

1. Provide a budget narrative that outlines key priorities for spending. The narrative should include how the proposed costs are necessary to ensure student success. Please identify both direct and indirect costs (indirect costs automatically calculated at 10 percent).
2. Use the budget template to show the breakdown of expenses across three periods:
  - a) January-June 2023: planning period
  - b) School year 2023-24: implementation period
  - c) School year 2024-25: implementation period



## Appendix B: Tennessee SySTEM Grant Rubric

### Eligibility Check

Requirement	Criteria
Budget	Proposed budget and budget narrative included in application (Y/N)
Identification of partnerships	Identifies one (1) LEA that will serve as fiscal agent (Y/N)  Identifies one (1) secondary school, one (1) partnering postsecondary institution, and one (1) partnering employer, and includes names and contact information (Y/N)
Project coordinator contact information	(Y/N)
Postsecondary partner contact information	(Y/N)
Employer partner contact information	(Y/N)
Commitments to Tennessee SySTEM grant expectations	(Y/N)

### Key Application Questions

Application Question	Points Possible	Criteria For Success
1	20	Identifies one (1) existing STEM or computer science dual enrollment course to be revised into a work-based course and includes a syllabus (20 points).  Identifies one (1) existing STEM or computer science dual enrollment course to be revised into a

		<p>work-based course but does not include a syllabus (10 points).</p> <p>Does not identify an existing STEM or computer science dual enrollment course to be revised into a work-based course and includes a syllabus (0 points).</p>
<b>2</b>	10	<p>There is a clearly articulated student recruitment strategy (10 points).</p> <p>There is a student recruitment strategy articulated but it lacks sufficient details (5 points).</p> <p>There is no student recruitment strategy articulated (0 points).</p>
<b>3</b>	10	<p>There is a clearly articulated plan for how the student recruitment strategy will include supporting the representation of all students, including Black, Latinx, low-income, and young women, in STEM and computer science dual enrollment work-based courses (10 points).</p> <p>There is a plan for how the student recruitment strategy will include supporting student representation but it lacks sufficient detail around specific student communities (5 points).</p> <p>There is no articulated plan for student inclusion and representation in student recruitment (0 points).</p>
<b>4</b>	15	<p>There is a detailed example of how the secondary school partnered with their postsecondary partner (15 points).</p>

		<p>There is an example of how the secondary school partnered with their postsecondary partner but it lacks sufficient detail (7 points).</p> <p>There is no example provided of how the secondary school partnered with their postsecondary partner (0 points).</p>
<b>5</b>	15	<p>There is a detailed example of how the secondary school partnered with their employee partner (15 points).</p> <p>There is an example of how the secondary school partnered with their employer partner but it lacks sufficient detail (7 points).</p> <p>There is no example provided of how the secondary school partnered with their employer partner (0 points).</p>
<b>6</b>	10	<p>There are clearly articulated academic support and advisement structures (10 points).</p> <p>There are academic support and advisement structures articulated but they lack sufficient detail (5 points).</p> <p>There are no academic support and advisement structures articulated (0 points).</p>
<b>7</b>	5	<p>Provides preliminary thoughts around the structuring of the course schedule, including how to split it up 80 percent in classroom and 20 percent at a worksite (10 points).</p> <p>Does not provide any preliminary thoughts around the structuring of the course schedule, including</p>

		how to split it up 80% in classroom and 20% at a worksite (0 points).
<b>Total Points Possible</b>	85	

## Budget

<b>Application Question</b>	<b>Points Possible</b>	<b>Criteria For Success</b>
<b>8</b>	15	<p>Budget contains clear alignment between funding requested and detailed, thoughtful answers to questions. It is complete and accurately reflected with sufficient justifications and detail listed for each line item (20 points).</p> <p>Budget is complete and submitted using the template provided. Budget contains detail and justification for expenditures (10 points).</p> <p>Budget lacks sufficient detail but expenditures are reasonable given the scope of the proposal (5 points).</p> <p>Budget is incomplete and/or unreasonable given the scope of the proposal (0 points).</p>
<b>Total Points Possible</b>	15	

## Bonus Points

<b>Points Possible</b>	<b>Priority Area</b>
<b>10</b>	The WBC will redesign a <b>computer science</b> dual enrollment course

<b>Total Bonus Points Possible</b>	10
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## Scoring Summary

<b>Sections</b>	<b>Points Possible</b>
<b>Key Application Questions</b>	85
<b>Budget</b>	15
<b>Bonus Points</b>	10

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**Total Points Possible**            **110**

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