



## Just-in-Time Teaching

 Indicates a research-demonstrated benefit

### Overview

Students answer questions online before class, promoting preparation for class and encouraging them to come to class with a "need to know."





**Type of Method**

Instructional strategy



**Level**

**Designed for:** Intro College Calculus-based  , Intro College Algebra-based  , Intro College Conceptual, Intermediate, Upper-level Undergraduate

**Can be adapted for:** Any



**Setting**

**Designed for:** Lecture - Large (30+ students) 

**Can be adapted for:** Lecture - Small (<30 students), Lab, Studio



**Coverage**

Few topics with great depth, Many topics with less depth



**Topics**

Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Modern / Quantum, Mathematical, Astronomy, Other Science, Pedagogy



**Instructor Effort**

Medium, High




**Resource Needs**

Computers for students, Course management system or other way of collecting responses online



**Skills**





**Designed for:** Conceptual understanding  , Making real-world connections, Using multiple representations, Study skills

**Can be adapted for:** Metacognition



**Research Validation**

**Based on research into:** theories of how students learn 

**Demonstrated to improve:** conceptual understanding  , problem-solving skills  , beliefs and attitudes  , retention of students  , study skills

**Studied using:** student interviews  , classroom observations 



**Compatible Methods**

[Peer Instruction](#), [PhET](#), [UW Tutorials](#), [Ranking Tasks](#), [ILDs](#), [CGPS](#), [Physlets](#), [Context-Rich Problems](#), [RealTime Physics](#), [Workshop Physics](#), [TIPERs](#), [ABP Tutorials](#), [SCALE-UP](#), [Modeling](#), [OSP](#), [SDI Labs](#), [OST Tutorials](#), [ISLE](#), [Thinking Problems](#), [Workbook for Introductory Physics](#), [LA Program](#), [PBI](#), [PET](#), [PSET](#), [LEPS](#), [CAE TPS](#), [Lecture-Tutorials](#), [Astro Ranking Tasks](#), [MBL](#), [New Model Course](#), [CPU](#), [SCL](#). [TEFA](#). [CU Modern](#). [CU E&M](#). [CU QM](#). [QuILTs](#). [IQP](#). [Thermal Tutorials](#).

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[Mechanics Tutorials](#), [SGSI](#), [Paradigms](#), [PUM](#), [Tools for Scientific Thinking](#), [PI QM](#), [M&I](#), [Tutorials](#), [Clickers](#), [MOP](#), [Responsive Teaching](#)

 **Similar Method**

None



**Developer(s)**

G. Novak, A. Gavrin, E. Patterson, W. Christian



**Website**

<http://jittdl.physics.iupui.edu/jitt/>

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## **Teaching materials**

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The JiTT website has a large [collection of JiTT activities](#) for many topics in physics and for many other disciplines.

