NEW JERSEY CENTER
FOR TEACHING & LEARNING

New Jersey Center for Teaching and Learning
Graduate School of Education

Student Handbook

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NEW JERSEY CENTER
FOR TEACHING & LEARNING

Dear Students:

Thank you for choosing the New Jersey Center for Teaching and Learning (CTL).

The mission of CTL is to empower instructors to lead school improvement so that all children have access to a high quality education. We welcome you in joining us on that mission.

CTL believes in the need for a systemic approach to the continuous improvement of teaching and learning. That applies to both our work preparing instructors, as well as those instructors' work in their classrooms. Continuous improvement requires always questioning what we do and how we do it… always asking how we can improve our work to benefit both our students and their students.

As part of this, we embrace technology as a valuable tool in improving student learning. Properly used, technology makes it possible to implement best practices in an easier, more efficient way. We look to new technologies to support us on our mission, while recognizing that technology is a tool, not a goal.

CTL is committed to a sustainable approach to improving student learning as well as to the environment. To this end, our content is available online instead of in print, and we primarily utilize virtual learning and electronic communication.

As you progress through your experience, please keep in mind that we, at CTL, welcome all your input and suggestions so that we can continuously improve. Please email any of us with your comments and ideas. My email address is bob@njctl.org.

We welcome you in joining us on our mission of improving access and quality of mathematics and science education for all students. Accomplishing this requires talented educators like you who have learned how to be effective using the tools provided by CTL to engage all students in higher levels of learning.

Sincerely,

Robert Goodman, Ed.D.
Executive Director

OVERVIEW

The New Jersey Center for Teaching and Learning (CTL) is an independent not-for-profit foundation, created by the New Jersey Education Association. Our mission is to empower teachers to lead school improvement so that all children have access to a high quality education.

CTL uses proven and replicable approaches to teaching K-12 science and math: the [1] Progressive Science Initiative® (PSI®) and the Progressive Mathematics Initiative® (PMI®). They provide students the essential foundation to pursue science, technology, engineering and math (STEM) careers.

Development of PSI

A journey that began fifteen years ago with the goal of improving science education for 16 pre-engineering students at a New Jersey vocational/technical high school has opened the way for the U.S. to become a global leader in science and math education.

In 1999, Dr. Robert Goodman – CTL's executive director – launched a new high school pre-engineering program for students with weak science and math skills. This need to bring under-prepared students up to a very high standard in science and math is seen across K-12 and in higher education. This early service to Dr. Goodman's students formed the precedent and experience for developing PSI, a program that boosts student achievement in science and math. In addition to improving students' math and science scores, PSI helped Dr. Goodman's school become the leader in New Jersey for AP Physics. In 2006, Dr. Robert Goodman was named the NJ State Teacher of the Year, and in 2009, he became executive director of CTL.

Why PSI is Unique

PSI combines direct instruction and social constructivism to create an engaging environment for students, regardless of their prior experience with science and math. The classroom is filled with lively debate and collaborative problem solving. It makes science and math the favorite subjects of many students as they achieve exceptional understanding.

A key aspect of PSI® is correcting the science sequence to physics-chemistry-biology, a change from the traditional biology-chemistry-physics sequence. The traditional sequence made sense when it began in 1892, but had not changed since the advent of quantum theory and molecular biology more than 50 years ago. Science taught in the PSI® sequence makes sense to students.

Furthermore, students learn algebra-based physics at the same time as algebra, bringing added meaning and context to math in a way that is generally missing in traditional programs.

Expansion of PSI

NJ policy makers supported bringing PSI to more schools. Expansion required course materials that could be broadly shared, and it also required more physics teachers – many more.

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[1] PROGRESSIVE SCIENCE INITIATIVE®, PSI®, PROGRESSIVE MATHEMATICS INITIATIVE® and PMI® are registered trademarks of Dr. Robert Goodman and the New Jersey Center for Teaching and Learning is the exclusive Licensee of these marks.

Course materials were created by capturing the content and pedagogy of PSI® in interactive whiteboard software. Use of interactive whiteboards and student polling devices enables the blending of curriculum, pedagogy and assessment into a seamless whole. It also allows for easy replication of that experience via downloading and using PSI®'s free editable electronic files.

The PSI® methodology, used to teach physics to students, was also employed to teach physics to teachers, helping to grow the pool of qualified physics instructors.

CTL quickly became the #1 producer of physics teachers in the U.S. Those teachers have led their schools to become top schools for students taking AP sciences. PSI® first proved that all students could learn physics. It has now proven that teachers from any subject area can learn physics. And that they can teach it successfully.

Expansion of PSI® to K-12 Math and Science

Common Core Mathematics Standards (CCSS) offer the same curriculum coherence for K-12 math as PSI® has for high school science. By applying the same methods for teaching and learning that were developed for PSI to math, the Progressive Mathematics Initiative (PMI) was created. PMI now provides free editable content for teaching math from kindergarten through grade 12.

More recently, Next Generation Science Standards (NGSS) began providing that same curriculum coherence to K-8 science. CTL used that opportunity to expand PSI science course materials to those grades – providing editable free science course materials from kindergarten through the AP sciences.

Offering complete sets of free editable course materials for all of K-12 math and science eliminates the expense of textbooks and allows real-time continuous improvement. It also provides K-12 vertical alignment, from year to year, and horizontal alignment, between math and science in each year. This provides unprecedented coherence, which as never before been possible.

Even more exciting, through our free, online materials, PSI and PMI are now available to educators and students around the globe. Through grant funding, CTL continues to demonstrate its commitment to education in the world. We have also worked with instructors in numerous countries throughout the world in, including South America and in Africa.

Teacher Training

In addition to creating new physics and chemistry teachers, CTL trains K-12 teachers to use its course materials. Teachers must teach in a new way to realize the full benefit of this new instructional and learning paradigm; they must deliver brief direct instruction (5 to 10 minutes), pose questions that drive collaborative student problem solving, provide feedback on classroom results and then set up the next problem. Instructors must inspire the continuous improvement of student understanding. To a great extent this involves teachers setting up the experience for students and then allowing students to take the lead.

More than 2,800 certified math and science teachers have been trained in PSI and PMI methods

and 268 teachers have completed a physics or chemistry endorsement. CTL is "on the ground" in more than 300 schools in New Jersey, Colorado, Utah, Rhode Island, Vermont, Maine, Argentina, The Gambia, Lesotho, and Ghana.

Sustainability

Sustainability is a core value of CTL. It is reflected in how we operate and in our programs. PSI and PMI eliminate textbooks, providing savings to schools which quickly repays investments in training and technology and thereafter provides lower education costs. It also reduces the environmental impact of printing, shipping, and storing textbooks while allowing the real-time continuous improvement of course materials.

CTL has no building; all employees work from home and are connected electronically. Most CTL courses are offered online to teachers. This lowers cost and eliminates wasted commuting time. It also is environmentally sound. The "greenest" building is no building; the most environmentally friendly commute is no commute.

Accomplishments

CTL is the #1 producer of physics teachers in the United States. We are opening access to STEM career paths for many who would otherwise not have it, particularly students who are Black and/or Hispanic and/or live in economically depressed circumstances. **http://njc.tl/wh**

CTL teachers are as likely to pass the Praxis physics or chemistry exams as non-CTL teachers. **http://njc.tl/1b1**

CTL programs are used in six of the top 12 NJ schools for AP Physics participation. CTL schools are more than 60% Black/Hispanic and free/reduced lunch; non-CTL schools are less than 8%. **http://njc.tl/1bi**

PSI minority and female students are more than five times as likely to participate in the AP physics B exam as students throughout New Jersey or the United States, and more than twice as likely to pass the AP physics B exam. **http://njc.tl/1b8**

CTL is improving math achievement through its work in physics. For example, Newark's 9th grade students who took physics saw a 14% improvement on a national Algebra I exam. **http://njc.tl/wg**

Policy leaders endorse CTL. For instance, the Stanford Center for Opportunity Policy in Education, headed by Linda Darling-Hammond, said, "The New Jersey Center for Teaching and Learning (NJCTL) has been doing groundbreaking professional development work in math and science instruction as well...using the innovative curriculum of 2006 New Jersey Teacher of the Year Robert Goodman...to create the Progressive Science Initiative." **http://njc.tl/1a3**

CTL received a 2011 Learning Impact Award Gold Medal from IMS Global. IMS, a consortium of more than 150 education technology companies, awards this each year to those that have had the greatest impact on student learning. **http://njc.tl/ims**

Approximately 250,000 students, teachers and other adults visited the CTL website during the past year, and downloaded 1.1 million files. These visitors were from 50 states and 193

countries. Also, during that period, CTL's 3,813 posted videos had more than 88,027 views, representing about 115,000 minutes of viewing.

Moving Forward

Join us in achieving our mission of improving access and quality of mathematics and science education for all students. Accomplishing this requires talented educators who well understand how to be effective using the tools provided by CTL to engage all students in higher levels of learning.

CTL's programs and courses are designed to make you an effective part of this movement to improve the world for so many students who currently lack the opportunity they all deserve. We look forward to working with you.

Program Guide

At the present time, CTL offers two endorsement programs for current NJ teachers – a Physics Endorsement Program and a Chemistry Endorsement Program. These programs are described below. Course descriptions are listed on the CTL website. Requirements for implementing a PSI classroom are listed on the CTL website.

Optional graduate credit may be purchased for completing some of the physics courses and the CTL Teaching Methods Course through Colorado State University's Global Campus (CSU-Global). Information on purchasing graduate credit is on the CTL website.

Any teacher seeking to learn more about physics, chemistry or CTL Teaching Methods may enroll in CTL courses. Before enrolling, teachers will need to check with their school district and/or their state department of education to see if credit can be earned for taking CTL courses.

Physics Endorsement Online

This program provides currently certified New Jersey teachers, in any subject area, an endorsement to teach physics through a combination of CTL Online Courses for Teachers; Field Experience Courses; and Praxis examinations. CTL Online Courses for Teachers provides all the required instruction in both physics content and teaching methods.

- Teachers complete the first two Online Courses for Teachers, Algebra-Based Physics (PHYS 6601) and Teaching Methods (MET 6101), before entering the classroom in the fall. These courses become available in January and must be completed by August 15 so that the teacher can begin the field experience in September.

- Teachers then take two Field Experience Courses, PHYS 6602 in the fall and PHYS 6604 in the spring, in which they teach Algebra-Based Physics to at least one section of students while receiving coaching and support from CTL.

- During the Field Experience, teachers take three additional Online Courses for Teachers in the content, and how to teach the content, of Advanced Placement Physics. These are taken in succession and should be completed before taking the Praxis examinations: PHYS 6603; PHYS 6605; and PHYS 6607.

Upon successfully completing these five Online Courses for Teachers, the two Field Experiences Courses, and passing the General Science Praxis and Physics Praxis, the candidate can apply to New Jersey for an endorsement to teach physics. Candidates cannot receive their verification of completion form from CTL without giving CTL their Praxis scores.

Chemistry Endorsement Online

This program provides currently certified New Jersey teachers, in any subject area, an endorsement to teach chemistry through a combination of CTL Online Courses for Teachers; Field Experience Courses; and Praxis examinations. CTL Online Courses for Teachers provide all the required instruction in both chemistry content and teaching methods.

- Teachers complete the first two Online Courses for Teachers, Learning and Teaching PSI Chemistry (CHEM 6701) and Teaching Methods (MET 6101), before entering the

classroom in the fall. These courses become available in January and must be completed by August 15 so that the teacher can begin the field experience in September.

- Teachers then take two Field Experience Courses, CHEM 6702 in the fall and CHEM 6704 in the spring, in which they teach Chemistry to at least one section of students while receiving coaching and support from CTL.

- During the Field Experience, teachers take three additional Online Courses for Teachers in the content, and how to teach the content, of Advanced Placement Chemistry. These are taken in succession and should be completed before taking the Praxis examinations: CHEM 6703; CHEM 6705; and CHEM 6707.

Upon successfully completing these five Online Courses for Teachers,the two Field Experiences Courses, and passing the General Science Praxis and Chemistry Praxis, the candidate can apply to New Jersey for an endorsement to teach physics. Candidates cannot receive their verification of completion form from CTL without giving CTL their Praxis scores.

POLICIES AND PROCEDURES

Overview

Maintaining a strong level of communication and collegiality across the CTL community is a high priority. A key step in fostering these traits occurs upon enrollment, when each CTL student is assigned to an advisor who will work with them on all issues related to completing their program successfully. If a student is not satisfied with the outcome of the support that he or she is receiving from his or her assigned advisor, they should then contact the Executive Director, who will work with them to assure that any issues are resolved.

Academic Calendar

CTL has an academic calendar that sets forth the deadlines for academic eligibility and specific grading policies published for every semester. Students' actions and decisions regarding requests for add/drop, refunds, withdrawals, incompletes and several other functions should be guided by the dates published in the academic calendar. Students are responsible for knowing these dates and complying with the deadlines, to which we strictly adhere. Current and future academic calendars may be found at www.njctl.org.

Although contact hours and course sequence are set, specific cohort start dates are on a rolling enrollment so end dates will vary based on the needs of individual schools and students.

Academic Integrity

CTL expects all members of its community to be honest and forthright in their academic endeavors, since violations of academic integrity would undermine our mission. Violations of academic integrity include, but are not limited to, cheating; fabricating, altering or falsifying documents, information or citations; forgery; gaining or providing unauthorized access to examinations; plagiarizing; or submitting false credentials.

Academic Standing

CTL has established standards for academic good standing within a student's academic program.

- Students must receive an 80 or higher in each course to successfully complete that course. An 80 is equivalent to a GPA of 2.7.
- You must receive a GPA of 3.0 for all courses combined in order to successfully complete the program.
- Students who have a GPA below 3.0 for any semester are placed on academic warning.
- Students on academic warning must work with their instructor and advisor to develop and agree to a corrective action plan to raise their GPA to a 3.0 or above in order to continue in their program.

Procedures for Determining Academic Standing

GPA (grade point average) is reported on a 4.0 scale. The top grade is an A, which equals 4.0. This is the standard scale at most colleges, and many high schools use it.

To convert your GPA to a 4.0 scale:

Letter Grade	Percent Grade	GPA
A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	65-66	1.0
F	Below 65	0.0

At the end of each fall and spring semester, once final grades have been posted, advisors review records of matriculated students enrolled in the endorsement program. Those students whose academic performance has fallen below the college's established standards (as noted above) are advised of the deficiency in writing via email. Students are required to check their email regularly.

Accommodations for Students with Disabilities
CTL supports the protections available to members of its community under Section 503 and 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act Amendments Act of 2008 and all applicable State regulations. Consistent with state and federal statutes that affirm and protect the equal opportunity rights of persons with disabilities, CTL has a policy of non-discrimination and equal opportunity for otherwise-qualified persons with disabilities.

Any instructor or student with a disability who believes that s/he has been the victim of discrimination may file a complaint to the office of the Executive Director under the New Jersey State Policy Prohibiting Discrimination in the Workplace.

Discrimination

I. Introduction

A. Laws Against Discrimination

CTL is committed to addressing discrimination/harassment by students or against students because discrimination is unlawful and undermines the integrity of the academic environment. The New Jersey Law Against Discrimination (LAD) and federal civil rights laws prohibit discrimination/harassment by or against instructors or students based upon the following protected categories: race, creed, religion, color, national origin, nationality, ancestry, age, sex/gender (including pregnancy), familial status, marital/civil union status, sexual orientation, gender identity or expression, domestic partnership status, atypical hereditary cellular or blood trait, genetic information, disability, (including perceived disability, physical, mental and/or intellectual disabilities), or liability for service in the Armed Forces of the United States.

B. Applicability

This policy applies to protect all students and instructors from discrimination/harassment by others at CTL, including students, faculty, staff members, vendors, and contractors. This policy applies to both physical and verbal conduct that occurs at CTL, (including electronic communications sent or received on campus) and that occurs at any location, which can be reasonably regarded as an extension of CTL (i.e., any field location, online course, or any facility where CTL-sponsored activities are being conducted or discussed).

C. Protection of First Amendment Rights

This policy will not be applied to abridge a student's exercise of free speech or expression which is protected by the Constitution of the State of New Jersey and the First Amendment to the U.S. Constitution.

II. Prohibited Conduct

It is a violation of this policy for a student to engage in discriminatory conduct against another member of the CTL community based upon any of the protected categories outlined in Section A that is sufficiently severe, pervasive, and objectively offensive so as to substantially disrupt college operations or materially limit another instructor ability to participate in or to receive the benefits, services or opportunities of CTL. Discrimination/harassment or the creation of a hostile environment can occur even if there was no intent on the part of an individual to harass or demean another.

III. Faculty/Staff Responsibilities

Faculty/staff should make every effort to maintain an educational environment for students that is free from any form of prohibited discrimination/harassment. Faculty/staff and/or supervisors are required to take seriously all student allegations or complaints of discrimination/harassment, including sexual harassment, and to immediately report these matters to the office of the Executive Director for confidential investigation and to consult with the Executive Director on interim corrective measures which may be recommended to prevent continued violations of this policy. All employees are expected to cooperate with

the investigation. Failure to cooperate in an investigation may result in disciplinary action.

IV. Dissemination

CTL will annually disseminate this Policy through the student handbook and employee handbook.

V. Complaint Process

CTL follows the State of New Jersey Model Procedures for Processing Internal Complaints Alleging Discrimination with regard to reporting, investigating, and where appropriate, remediating claims of discrimination/harassment. Each State entity is responsible for designating an individual or individuals to receive complaints of discrimination/harassment (including sexual harassment and sexual violence), investigating such complaints, and recommending appropriate remediation of such complaints. The office of the Executive Director is responsible for handling complaints against discrimination.

The Executive Director shall maintain a written record of the discrimination/harassment complaints received. Written records shall be maintained as confidential records to the extent practicable and appropriate.

VI. Prohibition Against Retaliation

Retaliation against any person who either alleges that s/he was the victim of discrimination/harassment, provides information in the course of an investigation into claims of discrimination/harassment in the academic environment, or opposes a discriminatory practice is prohibited by the Policy. Any teacher or student bringing a complaint, providing information for an investigation, or testifying in any proceeding under the Policy will not be subjected to adverse academic or employment consequences based upon such involvement nor be the subject of retaliation.

V. False Accusations and Information

An instructor or student who knowingly makes a false accusation of prohibited discrimination/harassment, or who knowingly provides false information in the course of an investigation of a complaint, may be subjected to administrative and/or disciplinary action. Complaints made in good faith, even if found to be unsubstantiated, will not be considered a false accusation.

VI. Confidentiality

All complaints and investigations shall be handled, to the extent possible, in a manner that will protect the privacy interests of those involved. To the extent practical and appropriate, confidentiality shall be maintained throughout the investigatory process. During the course of an investigation, it may be necessary to discuss the claims with the person against whom the

complaint was filed and other persons who may have relevant knowledge or those who have a legitimate need to know about the matter. All persons interviewed, including witnesses, shall be directed not to discuss any aspect of the investigation with others in light of the important privacy interests of all concerned. Appropriate administrative authorities may be contacted in the interim (before a final report is submitted to the Provost) if immediate or temporary actions must be taken to ensure the safety or well-being of any party to the complaint or to ensure the integrity of the investigation.

Drug-Free Environment

Students may not be under the influence of any controlled substance, such as drugs or alcohol, while participating in CTL courses. Prescription drugs or over-the counter medications, taken as prescribed, are an exception to this policy. Anyone violating this policy may be subject to disciplinary action up to and including removal from the program.

General Event Photography and Video Policy

CTL instructors and students may be included in marketing and communications materials via photographs and/or video. As a general rule, it is not necessary to obtain an image/photo release of any individual or group that is photographed or videoed in public venues (such as classrooms) or attending public events in order to use those photos or videos to promote CTL. However, it is the policy of CTL that all instructors and students will sign a general Release Form when enrolling in CTL courses, for the purpose of marketing.

Instructors or students who have a concern about the use of their image or who would like CTL to remove their image from being used can contact the office of the Executive Director.

Grade Appeals

CTL recognizes a student's right to file an appeal of an academic nature. Course instructors must follow CTL's course requirements and performance standards. An instructor's evaluation of students' academic performance is based on the requirements set forth in the course syllabus and is expressed through the submission of final course grades at the close of each semester. Under certain limited circumstances, a student may appeal a grade.

I. Circumstances Justifying an Appeal

Grade appeals will be considered only if a student can provide documentation supporting his/her case. Circumstances that might justify a grade appeal include, but are not limited to, computational error; grading error, or contesting an alleged violation of academic integrity or policy.

II. Appeals Process

If circumstances such as those described above can be documented, the student may appeal a grade by taking the following steps:

A. No later than twenty calendar days after the posting of grades, a student must bring

his/her appeal to the attention of the course instructor in writing by email. Supporting documentation must be provided. Both parties should make good faith efforts to share viewpoints and mediate differences of opinion.

B. If it is mutually agreed that a grade adjustment is warranted, the course instructor forwards the request, including explanatory reasons and all supporting documentation, to the Advisor assigned to the student.

C. If a student and the course instructor cannot reach an agreement and a student wishes to further pursue a grade appeal, the student must email a written appeal, including pertinent course materials or course work, to the Advisor assigned to the student. The Advisor will confer with the student and the course instructor, jointly or independently as he/she sees fit, review pertinent documents and course materials, and confer with other faculty or administrative staff members as appropriate.

D. If the Advisor determines that a grade change is warranted, the Advisor will advise the course instructor and student in writing.

E. If the Advisor determines that a grade change is not warranted, the course instructor and student will be so informed in writing.

F. If the instructor or student disagrees with the decision of the Advisor, the student or teacher may appeal this decision to the Office of the Executive Director. Appeals, including all pertinent documents related to the appeal within 7 days after the decision of the Advisor.

G. The decision of the Office of the Executive Director is final.

Library Services

CTL is a virtual and collaborative institution and does not host a physical library collection. Instead, CTL has an extensive list of K-12 STEM courses, research, and online resources posted on its website – www.njctl.org. This includes more than 90,000 slides for K-12 math and science courses.

The website also directs visitors to additional sources, including:

New Jersey State Library (http://www.njstatelib.org/). All New Jersey residents have access to this library for additional research, if necessary.

ERIC (http://eric.ed.gov/): Education Resources Information Center, indexes a wide variety of education research journal sources. This resource is part of the U.S. Department of Education.

PTRA (http://www.aapt.org/PTRA/): Physics Teaching Resource Agents, “a professional membership association of scientists dedicated to enhancing the understanding and appreciation of physics through teaching.” This resource is maintained by the American Association of Physics Teachers.

eMentoring (http://ementoring.aapt.org/): a service that “connects high school physics educators

who desire additional guidance with experienced high school physics educators." This resource is maintained by the American Association of Physics Teachers.

ComPADRE Digital Library (http://www.compadre.org): a digital physics library of "free online resource collections supporting faculty, students, and teachers in Physics and Astronomy Education." This resource is maintained by the American Association of Physics Teachers.

PhET (http://phet.colorado.edu/): Free, interactive educational simulations covering diverse topics designed by the University of Colorado; available in multiple languages.

RAFT (http://www.raft.net/): Resource Area For Teaching, "a non-profit organization founded in 1994 in California whose main focus is to inspire, engage and educate children through the power of hands-on teaching."

Students are also encouraged to use their county libraries as well as the NJ State http://www.njstatelib.org/

Official Communications

All faculty and students are required to have a current email address account which they check daily for important information and announcements from CTL. Instructors and students will be held responsible for information disseminated in this way.

Responsible Use of Electronic Communications

It is a violation of federal law and CTL policy to share and/or distribute copyrighted materials without the permission of the copyright holder. Violators may be subject to civil and criminal prosecution under the provisions of the Digital Millennium Copyright Act (DMCA), as well as personal sanctions specified in CTL policy.

Student Records

CTL recognizes the importance of maintaining confidential records for each instructor and student.

In order to protect the rights of students regarding these educational records, CTL has established policies and guidelines which describe the records maintained, provisions for releasing information, provisions for student inspection and review of records, and provisions for changes in records when warranted. These rules conform to State and Federal laws (the U.S. Department of Education guidelines for the "Family Educational Rights and Privacy Act of 1974 as amended," (FERPA) also known as the Buckley Amendment).