



SCHOOL OF SKILLED TRADES,
APPRENTICESHIP & RENEWABLE
TECHNOLOGY (START)
2014-2015

POWER ENGINEERING TECHNICIAN

PROGRAM GUIDE



INDEX

WELCOME STUDENTS:

WELCOME FROM DEAN	2
WELCOME FROM VICE PRESIDENT, ACADEMIC	3

PROGRAM SPECIFIC INFORMATION:

CONTACT INFORMATION FOR DEAN, ASSOCIATE DEAN, OFFICE STAFF, PROGRAM COORDINATOR	4
PROGRAM INFORMATION	
PROGRAM DESCRIPTION	5
PROGRAM LEARNING OUTCOMES	5
PROGRAM OF STUDIES	6-7
PROGRAM SPECIFIC ACADEMIC POLICIES	8

ADDITIONAL IMPORTANT INFORMATION:

ACADEMIC ADVISING – STUDENT ADVISOR	9
ACADEMIC INTEGRITY	9
AEGROTAT	9
CENTRE FOR STUDENTS WITH DISABILITIES	10
CONTINUING EDUCATION	10
COURSE OUTLINES	10
CREDIT TRANSFER INFORMATION	10
DURHAM COLLEGE VISION AND VALUES	11
ESSENTIAL EMPLOYABILITY SKILLS	11
GENERAL EDUCATION	11
IMPORTANT DATES	11
LEARNING MANAGEMENT SYSTEM USAGE	11
LIBRARY	12
MISSED FINAL EXAMINATIONS	12
PATHWAYS TO DEGREES	12
PRIOR LEARNING ASSESSMENT AND RECOGNITION (PLAR)	12
REQUIREMENTS FOR PROMOTION	13
SCHOLARSHIPS, BURSARIES AND AWARDS	13
STUDENT ACADEMIC LEARNING SERVICES (SALS)	13
STUDENT COMMUNICATIONS	13
STUDENT RIGHTS AND RESPONSIBILITIES	14

Please note the following important information:

Durham College strives to ensure the accuracy of the information in this publication. Please note that the academic curriculum is continually reviewed and revised to ensure program quality and relevancy. As such, the college reserves the right to modify or cancel any course, program, fee, procedure, timetable or campus location at any time. Please consult our website at <http://www.durhamcollege.ca> for the most current information.

June 2014

Welcome Students - A Message from the Dean

Welcome to Durham College's School of Skilled Trades, Apprenticeship, Renewable Technology and Centre for Food at Whitby. You have chosen wisely to attend Durham College, faculty and staff are committed to helping you successfully achieve your goals.

To do this, our faculty, who are dedicated professionals chosen from your field of study, have developed relevant programs of study and look forward to sharing their experience with you to help you achieve success in your program.

The course of study you have chosen will provide you with a mix of both theoretical and hands-on activities that are appropriate to your career field. Our classroom and shop facilities are well equipped and designed to support your learning experience. Your time at Durham College is an opportunity for concentrated study to prepare for your career. Please use your time here to your best advantage.

Durham College takes pride in our mission to provide a progressive and motivating learning environment to produce exceptional graduates who meet industry expectations. If at any time you require help please feel free to approach our faculty and staff for assistance. Your success matters to us!

Welcome

A handwritten signature in black ink, reading "Darrin Caron". The signature is written in a cursive style with a large initial 'D'.

Darrin Caron
Dean, School of Skilled Trades, Apprenticeship & Renewable Technology

Welcome Students - A Message from the Vice President, Academic

Congratulations on choosing Durham College and taking a very important step in preparing for your future. Durham College is known for high quality programs, leading edge technology, an award winning library and a student-centered approach to learning. Supporting our mission that the student experience comes first, Durham College is committed to providing students with quality learning experiences and support in finding fulfillment in education, employment and lifelong learning.

Our programs are continually shaped by market needs and delivered by exceptional teachers with real-world experience. The program you have chosen has been designed to help you develop the necessary skills and knowledge to support your success in your chosen career path. Our dedicated and professional staff and professors are committed to helping you achieve your educational goals and your career aspirations.

Durham College strives to be accountable to students and employers through the preparation of work-ready graduates who will continue to live our “success matters” focus in their professional work environment.

We are pleased you have chosen to study at Durham College and we look forward to supporting your learning journey – work hard, have fun, enjoy your college experience and campus life.

I wish you much success with your studies.

A handwritten signature in black ink that reads "Judy Robinson". The signature is written in a cursive, flowing style.

Judy Robinson,
Vice President, Academic

School of Skilled Trades, Apprenticeship & Renewable Technology

Whitby Faculty & Staff

Individuals may be contacted by dialing directly (905) 721-2000, followed by the appropriate extension.

Administration	Title	Phone	E-mail Address
Darrin Caron	Dean/Principal	3302	darrin.caron@durhamcollege.ca
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Julie Hauber	Administrative Assistant	3344	julie.hauber@durhamcollege.ca
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Mary Pearce	Administrative Coordinator	4025	mary.pearce@durhamcollege.ca
Shelley Chard	Student Advisor	4087	shelley.chard@durhamcollege.ca

Program Coordinators

Kevin Keays	Construction & Hoisting Techniques	3324	kevin.keays@durhamcollege.ca
Don Fishley	Construction Carpentry-Sustainable	4202	don.fishley@durhamcollege.ca
Dave Dewar	Electrical Techniques Electrical Technician-Instrumentation & Control	4199	dave.dewar@durhamcollege.ca
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Gregg Peel	Welding Techniques	4200	gregg.peel@durhamcollege.ca

Program Description

As a power engineering technician, you will be an expert in energy conversion and have access to worldwide power engineering opportunities including overseeing and maintaining equipment involved in the process of heat generation and utilization.

You will be introduced to all aspects of power plant operation with an emphasis on personal and workplace safety. You will study:

- Heating and refrigeration systems;
- Instrumentation and controls necessary to keep plant equipment operational;
- Operation of electrical equipment; and
- Power boiler systems and operations.

Hands-on practical classes and labs will reinforce your understanding through theoretical classroom-based components. Successful completion of this program will give you the theory necessary to challenge the Technical Standards and Safety Authority (TSSA) Operating Engineer examination. Please note: It is your responsibility to obtain the qualifying steam time in a registered facility, required by TSSA prior to the granting of certifications.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. Work in accordance with practices and procedures that minimize risk and enhance personal and public safety;
2. Operate the components of a power plant including boilers, turbines, internal combustion engines, generators, condensers, and auxiliary equipment;
3. Use industry standard power engineering technology in the performance of work and be able to adapt to changes in the industry;
4. Relate effectively to coworkers, subordinates, and supervisors in the work environment;
5. Perform duties in accordance with established codes, regulations, and legislation;
6. Work in a professional manner and employ ethical practices;
7. Use strategies that mitigate the effects of power generation on the environment;
8. Identify problems with power plant systems and equipment;

MTCU CODE: 59100

July 29th, 2009 (Date Updated)

POWER ENGINEERING TECHNICIAN

COURSE NAME	MOD	CODE	PREREQUISITE	COREQUISITES	LECT .	LAB HR	ALT. DEL. HR	FIELD PLMT .HRS
SEMESTER 1								
POWER ENG COMMUNICATIONS & ADMIN		COMM 1430			2	0	0	
POWER ENG BOILERS 1		HEAT 1401			2	0	0	
POWER ENG INSTRUMENTATION & ELECTRICITY		INST 1402			1	2	0	
MATHEMATICS 1		MATH 1424			2	0	0	
POWER ENG TRADE PRACTICAL/CALC 1		PRAC 1409			0	3	0	
POWER ENG APPLIED SCIENCE 1		SCI 1400			4	0	0	
POWER ENG PIPING & SKETCHING		SYS 1408			2	0	0	
					13	5	0	
SEMESTER 2								
COMMUNICATIONS		COMM 2400	COMM 1430		2	0	0	
POWER ENG MOVERS/AUX COMPONENTS 1		ENGI 2400	SYS 1408		2	0	0	
G GENERAL EDUCATION ELECTIVE		GNED 0000			3	0	0	
MATHEMATICS 2		MATH 2401	MATH 1424		2	0	0	
POWER ENG TRADE PRACTICAL 2		PRAC 2400	PRAC 1409		1	2	0	
POWER ENG SCIENCE IN MOTION		SCI 2400	SCI 1400		4	0	0	
POWER ENG HEATING SYSTEMS		SYS 2405	HEAT 1401		2	0	0	
POWER ENG AUXILIARY SYSTEMS 1		SYS 2406	INST 1402		2	0	0	
POWER ENG WORKPLACE LEGISLATION		WPL 2400			2	0	0	
					20	2	0	

POWER ENGINEERING TECHNICIAN

COURSE NAME	MOD	CODE	PREREQUISITE	COREQUISITES	LECT	LAB	ALT. DEL.	FIELD PLMT
					HR	HR	HR	.HRS
SEMESTER 3								
POWER ENG MOVERS/AUX COMPONENTS 2		ENGI 3400	ENGI 2400		2	0	0	
G GENERAL EDUCATION ELECTIVE		GNED 0000			3	0	0	
POWER ENG BOILERS 2		HEAT 3400	SCI 2400		2	0	0	
MATH FOR TECHNOLOGY 1		MATH 3401	MATH 2401		3	0	0	
POWER ENG TRADE PRACTICAL 3		PRAC 3400	SYS 2406 INST 1402		1	2	0	
POWER ENG APPLIED SCIENCE 2		SCI 3400	SCI 2400		4	0	0	
POWER ENG PIPING SYSTEMS 2		SYS 3400	SYS 1408		2	0	0	
POWER ENG AUXILIARY SYSTEMS 2		SYS 3401	SYS 2406		2	0	0	
					19	2	0	
SEMESTER 4								
POWER ENG CHEMISTRY		CHEM 4401	SYS 3400		3	0	0	
POWER ENG ELECTRICITY		ELEC 4404	INST 1402 SYS 2406		4	0	0	
POWER ENG FUELS & COMBUSTION		FUEL 4400	PRAC 2400 SYS 2405		2	0	0	
G GENERAL EDUCATION ELECTIVE		GNED 0000			3	0	0	
POWER ENG INSTRUMENTATION/CONTROLS		INST 4400	PRAC 3400		1	2	0	
POWER ENG CODES/LEGISLATION		LEGI 4400			1	0	0	
MATH FOR TECHNOLOGY 2		MATH 4401	MATH 3401		3	0	0	
POWER ENG PLANT SERVICES		PLNT 4400	PRAC 2400		2	0	0	
POWER ENG TRADE PRACTICAL 4		PRAC 4400	PRAC 3400		1	2	0	
					20	4	0	

NOTES: ELE - ELECTIVE - Students may take one or many subjects, depending on the requirements of their program. ELET - represents a typical subject load and IS included in the total hours per week, to reflect the total hours per week required. OPT1/OPT2/OPT3 - OPTIONS - Students choose subjects. OPT1 subjects are included in total hours per week. G - GENERAL EDUCATION - Subjects marked at the left margin with G are "General Education" subjects.

Program Specific Academic Policies

STUDENT CONDUCT: Students are expected to conduct themselves in a professional manner while on campus and off campus. Students are expected to comply with the program's professional conduct, appearance, and safety expectations found in this Program Guide and to understand and comply with off-site policies and procedures. It is everyone's responsibility to have respect for their peers.

CELL PHONES/PAGERS: Electronic communication devices will be turned off and not used in the classroom unless part of the objectives or learning activities of a course or lesson. Students who disrupt a class to the detriment of the other members of the class will be asked to leave.

MISSED TESTS: The opportunity to write a missed test is discretionary and may be granted based on meeting the following criteria: notifying the professor prior to the scheduled test time; submitting appropriate documentation (e.g. note from doctor, dentist etc) to validate the absence to the subject professor, and meeting with the professor.

PEER INTERACTION AND FEEDBACK: Students are expected to participate with their peers in active learning activities and demonstrations. These demonstrations provide students with opportunities for written/verbal feedback from their peers, instructor, and others on the application of learned course material.

ATTENDANCE: Students are expected to attend all lecture and practical sessions for this course. Failure to do so could result in serious gaps in knowledge that may result in safety breaches in the shop environment. If the professor feels that a student is not being "safe" in the shop, the professor will remove the student from the environment.

Students must wear PPE in the shop environment and follow safety guidelines. Failure to do so will result in the student being asked to leave and negate their opportunity to complete projects/assessments.

Academic Advising - Student Advisors

Each school provides a student advisor(s) to help you reach your full academic potential. These representatives can assist you with: accessing other college services; developing academic plans to promote success in the event of failed subjects or a low GPA; finding equivalent credits; identifying career goals and making sound academic decisions; making decisions regarding full- and part-time studies; reviewing graduation requirements; selecting electives and options; setting up academic plans; or transferring to another program. To view contact information for your Student Advisor, please visit:

<http://www.durhamcollege.ca/student-experience/helping-you-succeed/academic-support-resources/academic-advising>

Academic Integrity

Academic integrity refers to the pursuit of scholarly activity in an open, honest and responsible manner. Acts that undermine academic integrity, such as plagiarism, cheating and misrepresentation of work, contradict Durham College's core values.

To ensure the highest academic standards, students are accountable for the work they produce, and student work must be the product of his or her efforts. Durham College has purchased a license with Turnitin.com, an online service to detect unoriginal work and citation errors. The Academic Integrity Policy and Procedure documents (<http://www.durhamcollege.ca/academicpolicies>) provide a comprehensive explanation of Durham College's expectations regarding academic integrity.

Aegrotat

Aegrotat refers to a 'compassionate pass' in a course in which, due to **emergency circumstances** related to health and wellness, a student was unable to complete all of the evaluation requirements. Emergency circumstances that may warrant the designation of an Aegrotat include, but are not limited to: injury, illness and/or bereavement. Documentation supporting the request for an Aegrotat designation may be required.

The awarding of an Aegrotat credit is noted in a student's transcript as AEG and is therefore not included in the calculation of a student's grade point average. A student shall receive Aegrotat standing only once in a five year period.

Further information about Aegrotat standing can be found in the Aegrotat Policy and Procedure documents, please visit the following link:

<http://www.durhamcollege.ca/academicpolicies>

Centre for Students with Disabilities

The Centre for Students with Disabilities (CSD) at Durham College provides services to students with disabilities to ensure that equal access is available to all aspects of the academic environment. These services are designed in accordance with the Ontario Human Rights Code and the Accessibility for Ontarians with Disabilities Act. Our services are confidential. Please visit the following link to view valuable information regarding the CSD:

<http://durhamcollege.ca/student-experience/helping-you-succeed/centre-for-students-with-disabilities>

Continuing Education Course Book

If you are unable to access a day-time course (timetable conflicts, wish to repeat a course, etc.) or want to get a head start on your next semester, discuss your options with your Student Advisor. To view comprehensive information regarding Continuing Education offerings, please visit the following link:

<http://www.durhamcollege.ca/academic-schools/school-of-continuing-education>

Course Outlines

For each course, a Course Outline that describes course learning outcomes, course content, learning activities, evaluation methods, timelines and support resources is available online. Please note that students are expected to download copies of their course outlines from MyCampus prior to the first class in each course. Instructions for downloading are located on MyCampus at:

<http://www.durhamcollege.ca/mycampus>

Please visit the following link to view the Course Outlines Policy and Procedure documents: <http://www.durhamcollege.ca/academicpolicies>

Credit Transfer Information

Durham College is dedicated to helping you build upon your previous education. If you have studied previously at Durham College or another recognized post-secondary institution, you may be eligible to receive credit for the courses you have successfully completed. Please view the following link for credit transfer information: www.durhamcollege.ca/credittransfer

Durham College Mission, Vision and Values

Our mission, vision, values were created to help ensure the success of our students, staff and faculty. Please view our guiding principles at the following link: <http://www.durhamcollege.ca/about-us/corporate-links/governance/mission-vision-and-values>

Essential Employability Skills

Essential Employability Skills (EES) are skills that, regardless of a student's program or discipline, are critical for success in the workplace, in day-to-day living, and for lifelong learning. Please view the following link for further information:

<http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/essential.html>

General Education

The Ministry of Colleges and Universities requires all Ontario college students enrolled in a 2-year Ontario College Diploma or a 3-year Ontario College Advanced Diploma program to successfully complete three or more General Education (GNED) courses prior to graduation. For more information about GNED course selection, a full listing of GNED electives (with course descriptions), and how to receive GNED credits for prior post-secondary studies, please visit the General Education website at:

<http://www.durhamcollege.ca/academic-schools/school-of-interdisciplinary-studies-employment-services/general-education>

Important Dates

Durham College strives to keep you informed of all important dates throughout the academic year. Please review the 2014-2015 important dates that includes fee payments, web registration, add/drop, exam dates etc. You can find this information online, in the Durham College handbook and on MyCampus. Please review MyCampus for important updates and reminders on important dates.

Learning Management System Usage (LMS)

Professors are expected to use LMS or DC Connect to support student learning. As per the Learning Management System Usage procedure, faculty will post and reveal all marks to their students on an ongoing basis. To view the LMS Usage Policy and Procedure, please visit the following link:

<http://www.durhamcollege.ca/about-us/corporate-links/governance/policies>

Library

The Library is here to help you succeed! Stop by for help to research a topic, complete an assignment, or when you just need a quiet place to study. You may visit the library virtually at <http://www.durhamcollege.ca/library> or to view information regarding locations, hours, and more, please visit the following link:

<http://www.durhamcollege.ca/student-experience/learning-spaces/library/about-the-library>

Missed Final Examinations

A final examination is a discretely designed assessment administered in Week 15 of a 14 week semester. Students who, as a result of **non-emergency circumstances**, miss one or more final examinations during a single examination period may be eligible to apply to defer/reschedule the writing of these assessments.

To be eligible, students must have no less than a cumulative 1.5 GPA, apply for consideration using the appropriate forms and pay a fee. This privilege can only be used by a student once in a five-year period. External accreditation requirements, the availability of appropriate examination facilities and other constraints necessitate that not all courses will be eligible.

For more details, students should speak with their Student Advisor or review the Missed Final Examination Policy and Procedure documents at the following link: <http://www.durhamcollege.ca/academicpolicies>

Pathways to Degrees

Continue your post-secondary journey and leverage your Durham College education to earn additional credentials. To learn how you can further your education, visit www.durhamcollege.ca/pathways or check out the Durham College Transfer Guide at www.durhamcollege.ca/transferguide. Additional information regarding transferring between institutions in Ontario can be found at www.ontransfer.ca.

Prior Learning Assessment and Recognition (PLAR)

Prior Learning Assessment and Recognition (PLAR) is the process you can use to gain college credit(s) for learning and skills acquired through previous experiences. This may include workplace training, life experiences, self-directed study, community work, travel, hobbies and military service. By using the PLAR process, you may be able to complete a college certificate or diploma program in less time. Please view the following link for PLAR information:

<http://www.durhamcollege.ca/wp-content/uploads/plar.pdf>

Requirements for Promotion

Evaluation and Promotion:

Academic courses are evaluated using a variety of methods such as tests, essays, labs, written or verbal assignments, in-process activities, group work and/or final examinations. The evaluation criteria for each course are noted in its course outline. Students are advised to familiarize themselves with these criteria early in the semester. Please refer to the Grading and Promotion Policy and Procedures documents (<http://www.durhamcollege.ca/academicpolicies>) for a complete overview of grading and promotion practices.

Academic Probation:

Students who are not progressing satisfactorily according to criteria published in their respective program guides may be placed on academic probation, at the discretion of the school Dean or designate. Such students may be allowed to continue their studies on a Letter of Permission (an academic student contract) which will specify conditions which must be met to continue in their programs. Students who do not meet the conditions of their academic probation may be required to withdraw from full-time studies.

Scholarships, Bursaries and Awards

The Financial Aid and Awards office provides students with options to help fund their educational costs. To view valuable information, please visit the Financial Aid and Awards [Web Site](#).

Student Academic Learning Services (SALS)

The Student Academic Learning Services Centre helps Durham College students to achieve their academic goals. Academic supports include: peer tutoring, learning skills services, writing skills services, English language services, and subject specific supports for math, science, and business. Please visit the following link to view valuable information regarding SALS including how to register for 24/7 online access to SALS academic resources:

<http://durhamcollege.ca/student-experience/helping-you-succeed/student-academic-learning-services-sals>

Student Communications

Durham College is committed to communicating important information to you. Please view the following link to reference a comprehensive chart indicating specific vehicles. For example, social media, DC website, DC Mail, MyCampus, DC Connect, and more:

http://www.durhamcollege.ca/wp-content/uploads/DCCares_StudentMatrix_v5.pdf

Student Rights and Responsibilities

A policy and procedure is in place which articulates the rights and responsibilities of students at Durham College, and provides a framework for addressing non-academic misconduct by students. To view the Student Rights and Responsibilities Policy and procedure, please visit the following link:

<http://www.durhamcollege.ca/academicpolicies>