

PROGRAM GUIDE

Power Engineering Techniques – Fourth Class

Faculty of Skilled Trades & Apprenticeship



Table of Contents

WELCOME STUDENTS	3
Welcome from the Executive Dean & Principal, Whitby Campus.....	3
Welcome from the Executive Vice-President, Academic.....	4
DURHAM COLLEGE (DC) MISSION, VISION, AND VALUES	5
PROGRAM INFORMATION	5
Contact Information	5
Important Dates	5
Program Description.....	6
Learning Outcomes.....	6
Program of Study	7
ACADEMIC POLICIES	7
Academic Integrity.....	7
Academic Grading and Progression.....	8
Program Specific Academic Policies	8
STUDENT SUPPORTS	9
Academic Advising & Student Advisors.....	9
Student Academic Learning Services (SALS).....	9
Academic Support Centre.....	10
Coaching	10

WELCOME STUDENTS

A Message from the Executive Dean and Associate Dean on behalf of the Faculty and Staff of the Faculty of Skilled Trades and Apprenticeship



It is a pleasure to welcome you to Durham College. We are committed to providing our students a high-quality programs to meet your educational needs. We wish you success as you embark on a journey towards a rewarding profession and we will do our best to support you in reaching your career goals. If you have any questions or need assistance, please ask us for help to access the many services available to support your success. Thank you for selecting Durham College.

Sincerely,
Rebecca K. Milburn, PhD
Principal of the Whitby campus and Executive Dean
Faculty of Skilled Trades & Apprenticeship



A Message from the Executive Vice President, Academic



I am so pleased to welcome you to Durham College (DC). It is an exciting time, whether you are a returning student, getting back into the swing of things, or this is your first year of college.

You have made a great choice with DC. We offer a comprehensive range of exceptional academic programs and student services. Our students develop the professional and durable skills required to realize meaningful careers and make a difference in the world.

DC continues to lead the way. We do this by supporting students, delivering excellence in teaching and learning, and providing opportunities for experiential learning and technology-enabled education. Our goal is to inspire students to create success for themselves and their communities through the best in innovative and transformative education.

As this new semester begins, it is also important to acknowledge that our world is changing at a rapid pace. By choosing to study at DC this year, you've demonstrated a willingness to adapt and grow, which will help you move forward with your studies and life. We are all learning and experiencing things in new ways, and I encourage you to keep up that momentum. Be sure to get to know your faculty members, program coordinator, student advisor, and associate dean. These individuals can provide you with valuable information and resources to support your studies and career planning. Make the most of the enriching and rewarding opportunities available to you.

We look forward to supporting your academic journey as we help to foster your success. We are confident that you will soon see why DC is one of Canada's top colleges.

Have a successful academic year!

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

Dr. Elaine Popp
Executive Vice President, Academic

Durham College (DC) Mission, Vision, and Values

Used to guide the overall direction of the college, the Strategic Plan outlines DC's mission, vision, and values and is based on our four pillars – our students, our people, our work, and our community. It is by working together, focusing on these guiding principles, that we are able to deliver quality teaching and learning opportunities that support the success of our students and faculty. Together we're leading the way. The college's strategic plan is available on the [college's website](#).

PROGRAM INFORMATION

Faculty of Skilled Trades & Apprenticeship Contact Information

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Important Dates

DC strives to keep you informed of important dates throughout the academic year. Please review the 2022-2023 important dates that include fee payment deadlines, web registration, add/drop and grade release dates, etc. You can find this information on the [college's website](#) and on [MyDC](#). Please review [MyDC](#) regularly for updates and reminders on important dates.

Program Description

This certificate program is designed to introduce students to theoretical and practical aspects of power generation and power plant operation, at the Fourth Class level. Accredited by the Technical Standards & Safety Authority (TSSA) as a Fourth Class Power Engineering program, successful students will be able to challenge the 4A and 4B TSSA exams.

Students who successfully complete this program may qualify for a nine month reduction in steam time. In addition, students who pass their two TSSA tests and successfully complete three months of industry experience, may qualify for their Fourth Class Operating Engineer certificate of qualification.

Program Learning Outcomes

1. Identify and explain operation of components according to industry specifications.
2. Select and use a variety of troubleshooting techniques, problem solving skills and test.
3. Apply knowledge of electrical calculations, applied mechanics, thermodynamics, and applied science to ensure safe and efficient operation of the facility.
4. Communicate information to effectively and accurately document projects and perform daily operations in a power operating environment under the supervision of a qualified person.
5. Conduct modifications to quality control procedures under the supervision of a qualified person.
6. Develop and use strategies for ongoing personal and professional development to enhance performance.
7. Complete all assigned work in compliance with Technical Standards & Safety Authority (TSSA) regulations, occupational, environmental, health, and fire safety procedures, practices, and laws applicable to the power industry.

Program of Study

Power Engineering Tech - 4th (PETN)

Course Name	Mod Code	Prerequisites	Corequisites	Weekly Breakdown		
				Lec Hrs	Lab Hrs	FP/Alt Hrs
PETN-SEM1						
Practical 1 - Electrical/Instrumentation	ELEC 1114		PETN 1104, PETN 1106, PETN 1108	0	4	
MATH	MATH 1115			2	0	
Practical 1 - Mechanical	MECH 1114		PETN 1104, PETN 1106, PETN 1108	0	4	
BOILERS - DESIGN AND CONSTRUCTION	PETN 1104			4	0	
CHEMISTRY AND WATER TREATMENT	PETN 1106			2	0	
ELECTRICITY, INSTRUMENTATION AND CONTROL	PETN 1108		ELEC 1114, MECH 1114	4	0	
POWER TECHNICIAN ADMINISTRATION	PETN 1110			4	0	
APPLIED SCIENCE	PETN 1112			4	0	
				20	8	
PETN-SEM2						
Communication Foundations	COMM 1100			2	0	1
Practical 2 - Mechanical	MECH 1214	ELEC 1114, MECH 1114, PETN 1104, PETN 1106, PETN 1108, PETN 1110, PETN 1112	PETN 1204, PETN 1208	0	5	
PUMPING SYSTEMS	PETN 1204	ELEC 1114, MECH 1114, PETN 1104		3	0	
BUILDING SYSTEMS	PETN 1206	ELEC 1114, MECH 1114, PETN 1104		2	0	
HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION	PETN 1208	ELEC 1114, MECH 1114, PETN 1108, PETN 1112		3	0	
BOILER OPERATIONS, MAINTENANCE AND SAFETY	PETN 1210	ELEC 1114, MECH 1114, PETN 1104, PETN 1106		3	0	
Practical 2 - Power Plant	PETN 1215	ELEC 1114, MECH 1114, PETN 1104, PETN 1106, PETN 1108, PETN 1110, PETN 1112	PETN 1206, PETN 1210	0	5	
Steam Time Preparation	STEM 1200	ELEC 1114, MECH 1114, PETN 1104, PETN 1106, PETN 1108, PETN 1110, PETN 1112		1	0	
				14	10	1

Academic Policies

Durham College is guided by policies and procedures designed to protect its students' and employees' rights and responsibilities and meet institutional requirements, consistent with the Board of Governors' policy framework, legislative requirements, and Ministry of Training, Colleges and Universities directives. They are reflective of the college's mission, vision, and values and are positioned to support accountability and equality in a respectful post-secondary environment.

For more information, please review [Durham College's policies and procedures](#).

Academic Integrity

Academic integrity in teaching, learning, and research is fundamental to our mission and an expectation of the DC community. Acts that undermine academic integrity contradict our core values, erode educational inquiry, and diminish the quality of our scholarship and reputation.

To ensure the highest academic standards, students are accountable for the work they produce, and student work must be the product of their efforts. The [Academic Integrity Policy and Procedure](#) provides a comprehensive explanation of DC's expectations regarding academic integrity.

Academic Grading and Progression

Please refer to the ACAD 112 – [Academic Grading Policy and Procedure](#) documents for a complete overview of grading practices and ACAD 127 – [Academic Progression Policy and Procedure](#) to clearly understand the requirements necessary for a student to progress through an academic program.

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:** Electronic communication devices will be turned off and not used in the classroom unless part of a course or lesson's objectives or learning activities. 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., a note from a 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 lectures 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.
- ❖ **PERSONAL PROTECTIVE EQUIPMENT:** 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. Additional shop environment expectations and requirements will be outlined in a shop safety agreement that will be signed and kept on record. Failure to abide by the shop safety agreement will mean students will be asked to leave and negate their opportunity to complete projects/assessments.

Student Supports

Durham College offers students a variety of services to help them achieve academic success. From accessibility accommodations, financial aid, health services, and wellness coaching to student life, recreation, and career development, our knowledgeable staff provides holistic supports to help students reach their greatest potential.

Please visit the [Student Services](#) page for more information on each of the student service areas.

Academic Advising – Student Advisors

Student advisors are committed to student success and are available to help guide you through your college experience.

They can help you to:

- Identify career goals and make sound academic decisions;
- Develop academic plans to promote success in the event of failed courses or low-grade point average (GPA);
- Make decisions regarding full-time/part-time studies;
- Review graduation requirements;
- Set-up academic plans;
- Find equivalent credits.
- Transfer to another program or pathways to further education; and
- Access other college services to support student success.

To view contact information for your student advisor, visit the [student advisor's website](#)

Student Academic Learning Services (SALS)

SALS helps DC students to achieve their academic goals through free services and resources, including subject-specific support (math, accounting, biology, chemistry, physics, and statistics), academic reading and writing, learning strategies, and assistance with English language proficiency. Students also have access to peer tutoring, online resources through the [MyDC](#) landing page (under "[Learning Resources](#)"), and SALS ONLINE academic resources, videos, and quizzes in DC Connect.

Please email SALS at sals@durhamcollege.ca, or visit the [SALS website](#) for information on accessing resources and services, scheduling an appointment, registering for workshops, or sign-up to request or be a peer tutor.

Access and Support Centre

The Access and Support Centre (ASC) provides services to students who are temporarily at-risk or identified with an exceptionality, to ensure equal access to all aspects of the academic environment. The ASC provides accommodations to meet student's individual needs through assistive technology and coaching.

Working in collaboration with faculty and other service areas, the ASC team provides opportunities for academic success for all students.

For more information on services available, please visit the [ASC website](#).

Coaching

DC is pleased to offer International Coaching Federation certified wellness coaches to partner with students and facilitate growth, action, and movement towards the goals and outcomes they want to achieve. Coaching is not counseling, therapy, or academic advising. Coaching is student-focused and provides a safe, non-judgmental space to explore and work through what is getting in the way of being their best possible self. The more students put into coaching, the more they get out of it.

Wellness coaches support students by encouraging self-awareness, growth, change, and success. Focusing on student development and helping students achieve their full potential, wellness coaching involves identifying goals, strengths, barriers, motivations, expectations, and underlying beliefs. Coaches actively listen, ask thought-provoking questions that encourage self-reflection and work with students to take actions to move forward.

For more information, please visit the [Wellness Coaching website](#).