



## ENERGY SYSTEMS ENGINEERING TECHNOLOGY

### Work Placement Program

Welcome to the St. Lawrence College Energy Systems Engineering Technology (ESET) work placement program. This one-month work placement program is the final training experience for St. Lawrence College's ESET students. Participating companies will employ a final semester (third-year) ESET student for one month (students do not receive a salary during their 4-week placement). This is a great opportunity for the employer to experience a potential new employee while providing invaluable experience to a final year ESET student. Student WSIB and liability are covered by St. Lawrence College. The students are placed with qualifying employers for the month of April.

Energy Systems Engineering Technology work placement employees will contribute in developing, designing and implementing energy related projects. During their three years of training, the ESET students have acquired skills in the fields of energy auditing, alternative and renewable energy technology design, analysis and installation, HVAC, and building controls. They have also honed their technical report writing, energy system modeling, computer-aided drawing, entrepreneurial and presentation skills.

Work placements are expected to be with building designers, building management firms, ESCOs, architectural and construction firms, municipalities, community energy associations, renewable energy system providers and design companies incorporating energy efficiency, renewable energy and energy management into their projects. This is a valuable opportunity for your firm to gain exposure to a potential new employee while also providing a valuable work experience to a graduating ESET student.

Sincerely,

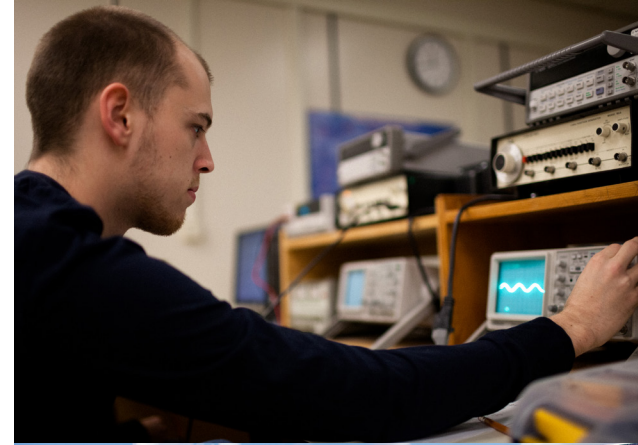
**Brooke Gilmour**

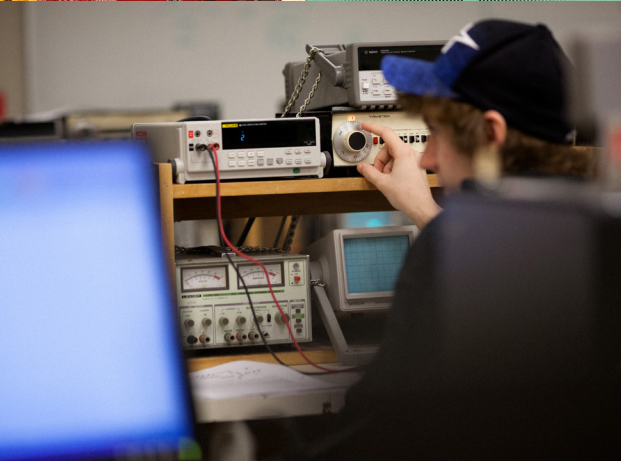
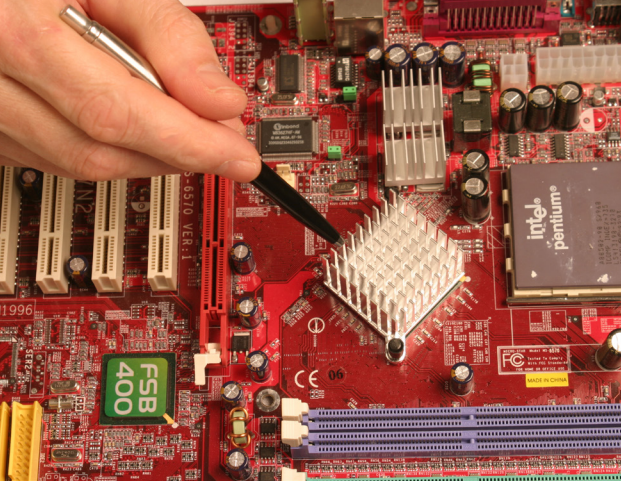
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## FREQUENTLY ASKED QUESTIONS

### WHAT OVERALL SKILLS DO ESET STUDENTS HAVE?

ESET students are able to analyze small commercial and residential buildings for energy efficiency and suggest methods and equipment to improve building performance. Graduates are also able to size, specify and install a variety of renewable energy equipment such as solar hot air and water heating, photovoltaic and small wind electricity systems. They have experience with various energy system and economic modeling tools. They are trained as G3 gas technician and have the opportunity to write their certification exam with TSSA. They have a good understanding of fuel types, environmental impacts and the options for reducing greenhouse gases through conservation, efficiency and use of renewable energy

### WHAT SPECIFIC TRAINING DO ESET STUDENTS HAVE?

- ▶ Residential and medium sized commercial building auditing, walkthrough to engineering level audit requirements, including building modeling with Hot 2000, Hot2XP, RETScreen Version 4, EQuest, and Renewise
- ▶ Selection and programming of automated building control systems (Johnson controls, X10)
- ▶ Resource, site evaluation and system performance modeling with various software (PV Design Pro, RETScreen, Combusun) for system design in solar thermal (air and hot water), photovoltaics and small wind and hydro projects
- ▶ Heat transfer types and determination of heat loss from first principals using R and RSI values, use of IR colour camera
- ▶ AC power distribution, power factor correction, delta and Y designs, transformers, circuit computer simulation
- ▶ AC and DC circuit analysis
- ▶ Facility to work with concepts of energy, power, COP, efficiencies, first law of thermodynamics, enthalpy, latent heat, psychrometrics, mass and volume flow
- ▶ Facility to work with determining tonnes of CO2 emissions
- ▶ Hands-on experience with batteries, inverter selection and programming, PV panel array assembly and wiring, grid tie PV, small wind machine assembly and tower erection, SDHW installation and commissioning
- ▶ 2D ACAD and introduction to 3D
- ▶ Gas technician G3 license (N.G and propane) and practical operating experience with residential to small commercial sized heating and ventilating equipment, including heat pumps
- ▶ Technical report creation and presentation
- ▶ Project Management, project specific research, development of a planned solution, implementation (if that is appropriate for the project) and reporting to the client