

PRECISION ENGINEERING

BACHELOR of ENGINEERING in PRECISION ENGINEERING – LEVEL 7 Add-on



LIT
ENGINEERING &
BUILT ENVIRONMENT

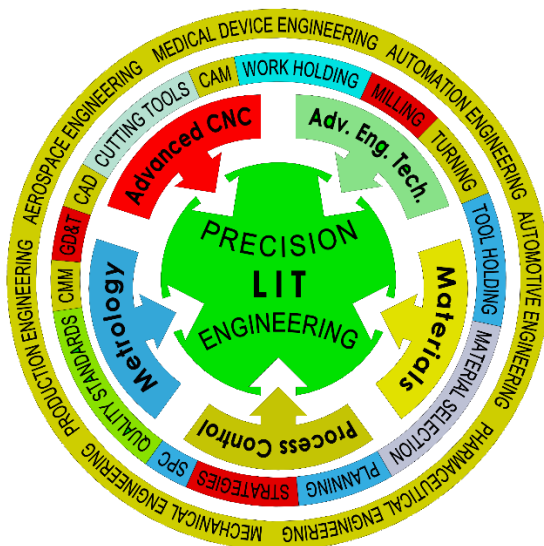
What is the programme about?

This Level 7 degree in Precision Engineering has been designed with industry to respond efficiently and effectively to the needs of the Precision Engineering industry. This is the equivalent of third year Precision Engineering as a one-year add-on programme to existing qualifications or experience.

The programme focuses on the key factors required in the design, manufacturing, and assessment of high value components in the materials processing sector with specific emphasis in metal cutting and related processes. This is a workshop/lab based programme with hands-on experience on state-of-the-art CNC machines, CAM software and metrology equipment. Learners will work as individuals and in groups on a variety of industrial standard engineering projects.

This programme can be completed in one year full time. Alternatively, a work/learn model can be used over two years; students work three days per week and study in LIT two consecutive days per week.

Programme graduates will work as precision engineers in world class manufacturing environments and will be highly skilled in areas of CNC machining, CAD/CAM, metrology and material selection methods.



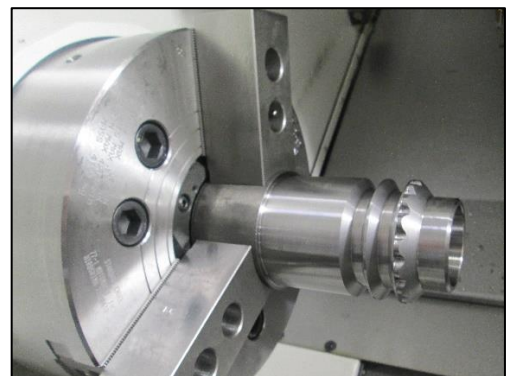
What will I be able to do when I finish the programme?

A person who has completed this programme will be able to:

- Interpret engineering drawings and carry out model based inspection of components
- Support key business metrics with ongoing process improvements and introduction of new manufacturing processes and technologies.
- Support manufacturing process development to meet project milestones and to allow operations to meet their targets.
- Drive process improvements/capacity increases through new technology / equipment selection and specification.
- Validate requirements on new equipment introductions / processes / process changes.
- Design & develop tools, fixtures, and gauges for manufacturing operations and new product / process introductions in conjunction with toolroom technicians and process engineers.
- Preparation and maintenance of all relevant manufacturing specifications.

Features of the programme

- **Programme flexibility** to work and learn, one year course, but can be undertaken part-time over two years
- Develops a deep knowledge of materials, design and manufacture through the utilisation of **modern technology**
- Developed in **conjunction with world class companies** in response to a shortage in highly skilled qualified engineers
- High practical content in **CNC Machining, Metrology, Materials and Statistical Process Control**
- **Uses industrial equipment** to solve real industrial problems
- Allows for maximum learning and **self-development**
- Facilitates **progression** to Level 8 programmes within LIT and other colleges/universities



Turning with Milling on LIT's MAZAK MSY-250 Lathe



5-axis Machining on a LIT's Spinner CNC machine

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Year 3. Semesterised Modules (Each module is 5 Credits)

Semester 1. (Sept. to December)

1. Advanced CNC Machining 1
2. Advanced Six Sigma and Metrology 1
3. Process Planning
4. Applied Mechanical Engineering Mathematics 1
5. Materials Selection
6. Group Project

Semester 2. (January to May)

1. Advanced CNC Machining 2
2. Advanced Six Sigma and Metrology 2
3. Advanced Engineering Technology
4. Applied Mechanical Engineering Mathematics 2
5. Mechanics and Failure Analysis
6. Individual Project

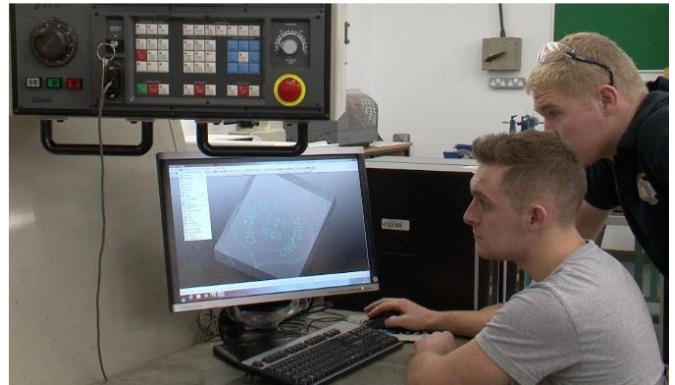
Modules 1,2,3 are on Mondays/Tuesdays

Modules 4,5,6 are on Thursday/Friday

Employment opportunities

Graduates will typically be employed in one of the following roles:

- Precision engineer in a world class machining environment
- Applications engineer utilising CAD/CAM to maximise utilisation of machines tools
- Design Engineer and development of complex components
- Manufacturing engineer/Production engineer
- CNC machinist and programmer
- Materials engineer
- Process control engineer
- Equipment test engineer/technician
- Engineer in the medical device, human implant, and Life Sciences Industries



Minimum Entry Requirements

Level 6 Higher Certificate successfully completed in an engineering related area, such as mechanical engineering, as well as prior learning in:

- Engineering/Manufacturing Technology
- CAD (SolidWorks)
- CNC
- Metrology and

Advanced Entry

Level 6 Craft Certificate (trade) or equivalent such as Fitting or Toolmaking Candidates who hold a Senior Trade Certificate and/or National Craft Certificate with appropriate endorsements or examination attainments in a cognate area will also be considered for advanced entry into Year 3 subject to a satisfactory interview. Prior learning in areas of experience are such as:

- Higher Certificate Engineering Mathematics and Science
- Engineering/Manufacturing Technology
- CAD (SolidWorks)
- CNC
- Metrology and Quality

For application details contact:

Admissions Office:

Limerick Institute of Technology,

Tel: (061) 293262 or (061) 293262

admissions@lit.ie

<http://www.lit.ie/Admissions/default.aspx>

Where a candidate does not have sufficient/appropriate prior learning experience in these areas, entry to the Level 7 programme in Precision Engineering can still be granted based on agreement to undertake additional night class modules to gain the required level of knowledge before entering the Level 7. Each students application is individually assessed.

For example, LIT offers the following night class programmes: (<http://www.lit.ie/Prospectus/FLProspectus/default.aspx>)

- CAD: City and Guilds Level 2 Award in CAD Parametric Modelling (SolidWorks)
- Engineering Mathematics and Science modules from a similar programme
- Engineering Technology and workshop prior learning or similar modules.
- CNC: CNC Machining City and Guilds or similar modules (CAM).

Contact Information

For further information contact: -

Head of Department,
Dr. Philip Ryan,
Email: Philip.ryan@lit.ie
Tel: - +353-61- 293242

Programme Leader,
Mr. Ciarán O'Loughlin
Email: ciaran.oloughlin@lit.ie
Tel:- +353-61-293339



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