



TECHNICAL ENGLISH

Course:Technologist degree in industrial mechanics

Teacher: Clara Cnudde





WELCOME



Mechanical engineering

ANALYTICAL TOOLS FLUID
WATERCRAFT DESIGN PROTOTYPING
AEROSPACE MECHANICAL
MANUFACTURE ENVIRONMENTAL
DEVICES ROBOTICS
CREATIVE MACHINE
ACCURATE ENGINEERING
ELECTRONICS
EQUIPMENT
TECHNICAL
INNOVATE AUTOMOTIVE FUNCTIONALITY
MECHANICS SOLID SOLAR
PROBLEM-SOLVING PHARMACEUTICAL 3-D THERMODYNAMICS
MICROPOWER PRINTING WIND ENERGY
KINEMATICS CONTROL MICROFABRICATION
SPACECRAFT TURBINES

Skills Mechanical Engineer

Hard skills

Prototyping

Workflow development

Knowledge of manufacturing

Software knowledge

Testing and troubleshooting

Knowledge of safety regulations

Soft skills

Creativity

Problem-solving

Communication

Collaboration/coordination

Decision-making/judgment


Negotiation

INGLÉS TÉCNICO

Créditos: 8

Objetivos

- Acceder a fuentes de información de su interés escritas en inglés.
- Adquirir habilidad en la interpretación de texto.
- Adquirir un nivel de comprensión lectora que resulte aplicable en la lectura extensiva de temas de Ingeniería Mecánica.
- Manejar terminología en lectura elemental.
- Reconocer estructuras gramaticales de la lengua inglesa.



Metodología de enseñanza

Se dictarán clases teóricas destinadas a la presentación formal de los temas, y prácticas destinadas al ejercicio necesario para la incorporación de los contenidos, así como a las aplicaciones prácticas.

Se dictarán 4 horas semanales de clases teórica/prácticas.



Bibliografía

- Diccionario bilingüe.
- Publicaciones varias en forma de libros, revistas, manuales, folletos, avisos publicitarios, diarios y documentos en idioma inglés sobre temas de Ingeniería Mecánica.

Régimen de Aprobación

A partir de una evaluación continua, según el puntaje acumulado en las diversas instancias (dos parciales, un parcial a mitad del curso y otro al final) se considerarán las siguientes franjas de aprovechamiento de las pruebas: menos del 60% (notas 3, 4 y 5) gana el curso y debe rendir un examen final, y con más del 60% (notas 6, 7, 8, 9, 10, 11 y 12) aprueba la asignatura y exonera.

Área de formación

Actividades

Previaturas

Sin previaturas.

Para rendir el examen debe tener aprobado el curso de Inglés Técnico.

Tiene Calidad de Libre

Calendario Lectivo 2024

Cursos	Inicio	Fin
Primer Semestre	04.03.2024	15.07.2024
Segundo Semestre	05.08.2024	03.12.2024

Parciales	Inicio	Fin
Primer Semestre	27.04.2024	08.05.2024 y 11.05.2024
	04.07.2024	15.07.2024
Segundo Semestre	21.09.2024	01.10.2024 y 05.10.2024
	22.11.2024	03.12.2024

Exámenes	Inicio	Fin
Período Febrero	29.01.2024	02.03.2024
Período Julio	16.07.2024	03.08.2024
Período Diciembre	04.12.2024	21.12.2024

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Temario

I: Conceptos Básicos de la Comprensión Lectora.

a) Lecto-comprensión:

a.1) Técnicas y herramientas de trabajo

- i. Inferir el significado de palabras desconocidas en un texto.
- ii. Identificar la idea principal, ideas secundarias y detalles en un texto escrito.
- iii. Esquematizar las ideas de un texto escrito.
- iv. Comparar y contrastar las ideas presentes en un texto escrito.
- v. Identificar relaciones causales en un texto escrito.
- vi. Identificar el uso de narración y descripción en un texto escrito.
- vii. Reconocer expresiones idiomáticas.

a.2) El diccionario bilingüe. Cómo usarlo, comprender la nomenclatura utilizada, abreviaturas, etc.

b) Frases sustantivas:

b.1) Su formación y análisis

II: Las Técnicas de la Comprensión Lectora.

a) Leer y entender el inglés técnico y científico.

a.1) Técnicas para interpretar vocabulario

- i. Buscar el significado de la palabra en un diccionario.
- ii. Buscar el significado de la palabra mediante el análisis de la palabra.
- iii. Inferir el significado de una palabra en el texto mediante el uso de claves dentro del texto (estas claves pueden ser una palabra, frases o signos de puntuación próximos a la palabra conocida). Algunas claves son: Definición, Experiencia, Contraste, Inferencia.

a.2) Técnicas para entender oraciones

- i. Análisis de la oración (Identificar verbo principal, sujeto, etc).
- ii. Reconocimiento de claves de puntuación.
- iii. Reconocimiento de términos referenciales (pronombres personales, pronombres demostrativos, relativos, etc.

a.3) Técnicas para analizar párrafos

- i. Encontrar el tema principal
- ii. Encontrar la idea principal.
- iii. Encontrar los detalles principales que sustentan el tema.

a.4) Interpretación de Ilustraciones y Gráficos

b) La oración simple: orden lógico. Formas afirmativa, negativa e interrogativa. Artículos. Formas plurales y singulares. Verbo "to be".

III: De la Oración Simple a la Compleja. Verbos "to be" y "to have".

a) Preposiciones y adverbios de lugar. Palabras interrogativas. Términos referenciales. Verbo "to have"

a.1) Palabras interrogativas: who, what, where, etc.

a.2) Preposiciones y adverbios: with, since, at, through, from, to, etc

a.3) Términos referenciales: these, that, those, etc

a.4) Verbo to have. Ejercicios de aplicación.

IV: Uso de la Voz Pasiva en Textos Técnicos.

a) Presente Simple. Voz Pasiva con verbos regulares e irregulares.

b) Ejemplo del uso de voz pasiva en temas de Ingeniería Mecánica.

V: Objetos y sus Cualidades. Adjetivos.

a) Imperativo. Adjetivo calificativo: posición. Comparación de adjetivos.

b) Adjetivos de cantidad: some, any.

c) Ejemplo del uso del modo imperativo en textos informáticos.

VI: Acciones en el Pasado. Tiempos Verbales.

a) Pasado Simple. Presente Perfecto. Futuro.

b) Modalización: habilidad, necesidad, obligación, posibilidad, predicción, inferencia (must, should, ought to, can, could, may, might, will, would, have to, need).

c) Ejemplos del uso de los tiempos verbales en textos de Ingeniería Mecánica.

VII: Aplicación de los Conocimientos

a) Traducción de textos técnicos.

Thematic Units:

- 1- What does a mechanical engineering technologist do?***
- 2. Engineering materials***
- 3. Forces in engineering***
- 4. Energy***
- 5. Hydraulics and pneunmatics***
- 6. Maintenance***
- 7. Automation and robotics***
- 8. Safety at work***



Useful links:

<https://asmedigitalcollection.asme.org/memagazineselect>

<https://engineeringmagazine.co.uk/>

<https://www.maintenanceandengineering.com/2019/10/17/a-common-language/>

What is a technologist?

- ▶ “a person who uses scientific knowledge to solve practical problems”¹
- Responsible for providing material things necessary for human subsistence and comfort

<https://youtu.be/Y8mU4y0EVmg>

WHAT IS AN ENGINEERING TECHNOLOGIST?

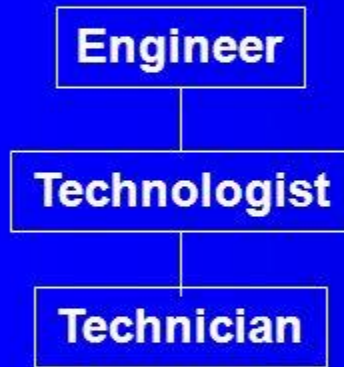


What is a Technician, a Technologist or an Engineer?

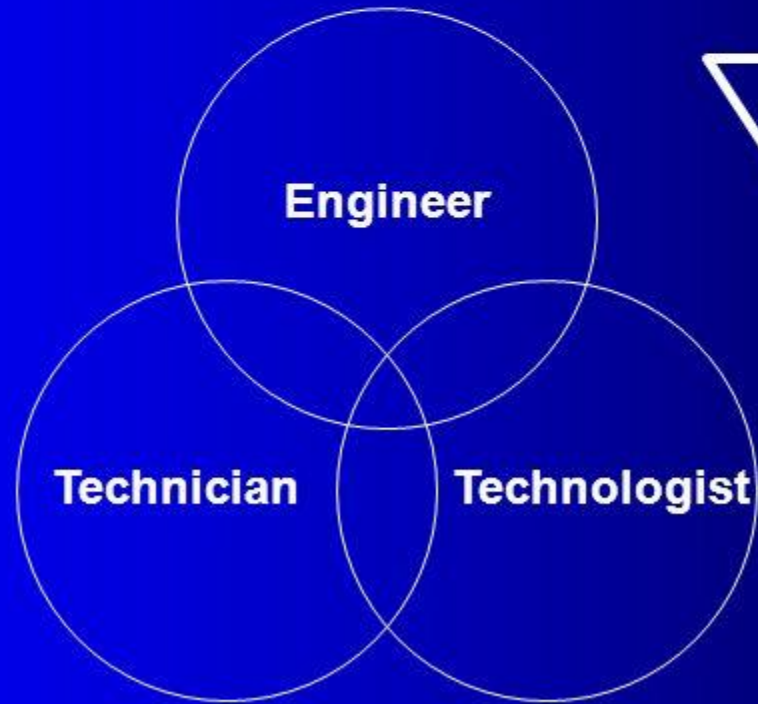


Engineer vs. Technologist vs. Technician

Administrative Model



Functional Model



Educational Model

Broad



Narrow

Comparing Technologists, Technicians and Engineers

Engineers, technologists and technicians may work for the same company and on the same projects, but in different capacities. will work under the management of project managers, are the assistants to the engineers, and will aid both technologists and engineers.

technicians

engineers

technologists

Comparing Technologists, Technicians and Engineers

Engineers, technologists and technicians may work for the same company and on the same projects, but in different capacities. **Engineers** will work under the management of project managers, **technologists** are the assistants to the engineers, and **technicians** will aid both technologists and engineers.

Responsibilities of Technologists vs. Technicians vs. Engineers

Mechanical engineers are those general engineers who take on the major tasks of analyzing, **1** and building new engines and thermal products, or updating items like medical devices. **Mechanical technologists** are those trained personnel who work closely with engineers **2** their drafts and designs. They will work as **3** with work crews and engineers. **Technicians** also work with engineers, but in most companies they will work directly under a technologist doing much of the more basic work. This might include **4** and analysis, double-checking schematic specifications, and providing **5** for other employees.

tech support
data collection

go-betweens

interpreting
designing

Responsibilities of Technologists vs. Technicians vs. Engineers

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Technicians also work with engineers, but in most companies they will work directly under a technologist doing much of the more basic work. This might include data collection and analysis, double-checking schematic specifications, and providing tech support for other employees.

Engineer

Mechanical engineers are the generalists of the engineering arena. They will have their fingers in a lot of pies including research, development, design, and creation. These engineers also test and retest a variety of devices that might include engines, tools, or simple machines. Overall, they usually work in offices, but may also visit work sites when necessary.

Job responsibilities of an engineer include:

- Analyzing problems that might need new types of testing devices
- Designing and/or redesigning thermal devices
- Creating and testing prototypes
- Designing power-machines like engines, generators and turbines
- Running simulations to check if systems work together properly

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Technologist

Mechanical technologists assist mechanical engineers in a variety of responsibilities. They could aid engineers with the generation, transmission and use of certain types of energy. These individuals may be put in charge of preparing workflow layouts, performing cost analysis or conducting data analysis.

Technologists usually have more education and responsibilities than a technician.

Job responsibilities of a technologist include:

- Interpreting schematics and specifications for work crews
- Assisting engineers in the creation and testing of manufacturing products or machines
- Designing and helping produce specialized equipment
- Using computer drafting software to create blueprints or drafts for tools or machines
- Working with crews providing technical support or construction instructions

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Technician

Mechanical technicians aid mechanical engineers and technologists with their work. They may be tasked with drafting rough layouts based on the engineers' descriptions. Technicians could be asked to record testing information and analyze the data for a new engine. They might also make cost estimates for labor and materials on a project.

Job responsibilities of a technician include:

- Measuring dimensions on a drafting sketch for accuracy
- Creating layouts and drawings of tools or schematics
- Using 3D software to create the process of putting parts together
- Reviewing blueprints and specifications for projects
- Working with engineers to make production run smoothly

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Technicians

In general, **technicians** have a two year degree.

Technicians are most often employed in service jobs. Their work typically involves equipment installation, troubleshooting and repair, testing and measuring, maintenance and adjustment, manufacturing, or operation. Technicians in these positions are sometimes called field service technicians, field service engineers, or customer representatives. Technicians also work as engineering technicians, lab technicians, engineering assistant, or associate engineer.

Match these headings with the paragraphs below:

Main focus of engineering technologists' work

Engineering technologists' field of work

Positions for engineering technologists

Engineering Technologists

1 An **engineering technologist** is a specialist devoted to the implementation of existing technology within a field of engineering. Technologists often work with engineers in a wide variety of projects by applying basic engineering principles and technical skills. The work of technologists is usually focused on the portion of the technological spectrum closest to product improvement, manufacturing, construction, and engineering operational functions.

2 Technologists are employed in a large and wide-array of industries, including manufacturing, construction, industrial, maintenance, and management. They may be hired as managers of technology, depending on the technologist's educational emphasis on management preparation. Entry-level positions such as product design, testing, development, systems development, field engineering, technical operations, and quality control are all common positions for engineering technology graduates.

3 In general, the work of engineering technologists focuses on the applied and practical application of engineering principles, whereas the work of engineers emphasizes the theoretical aspects of mathematical, scientific and engineering principles. Candidates must have a minimum of a high school diploma or high school equivalent.

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Engineers

Engineers design equipment and systems. They have B.S., M.S., or Ph.D. in Electrical, Mechanical, Civil or other engineering fields.

Mechanical Engineering Technologist Responsibilities

Here are examples of responsibilities from real mechanical engineering technologist resumes representing typical tasks they are likely to perform in their roles.

- Design, manage and recommend layout changes and equipment purchases.
- Manage and coordinate a company wide transition from 2D AutoCAD to a 3D modeling environment.
- Supervise teams of support personnel to accomplish field test missions and facilitate effective communication between test teams and customers.
- Circuit design and PCB layout.
- Test, troubleshoot, disassemble and repair mechanical equipment supporting the U.S. navy's MK30 underwater target program.
- Work with other engineers and customers to create electronic sub-assemblies and modules including analog and digital design and PCB layout.
- Work with the implementation of HVAC systems for new and remodel buildings using AutoCAD.
- Assess new materials and research documentation to determine compliance with ANSI and ISO standards.
- Maintain and insure compliance with HazMAT, ISO and OSHA plant procedures and regulations.
- Support engineering team in planning projects, budgeting, and drawing diagrams in AutoCAD.
- Work hands-on with maintenance personnel (electrical & mechanical) and millwrights to troubleshoot and solve problems.
- Build prototype circuits and/or test fixtures by hand using SMT components as small as TSSOP and BQSOP packages.
- Coordinate with the PCB designer about changes need in components part numbers and SMD footprints due to incorrect PCAD libraries.

- 
- Fabricate parts for modifications to equipment to adhere to the safety and ergonomic needs of the company and OSHA standards.
 - Oversee civil, site utilities, HVAC, electrical, controls, structural, finishes, fire protection, and plumbing.
 - Perform preventative maintenance on SMT placement machines.
 - Conduct mechanical, and electronic repairs on CNC manufacturing equipment.
 - Use SolidWorks and/or AutoCad to modify existing design and newly install equipment.
 - Utilize SolidWorks and AutoCad design machinery for baby care and feminine care sectors.
 - Collaborate closely with contract manufacturers to ensure prototype assemblies are built during the development stages of high-end servers.
 - Assist mechanical engineers with facility design through producing sketches/ rough design layouts, basic calculations/ estimates, and educate suggestions.

- Issue resolution in design, hands on mechanical/electrical wiring, part procurement, facility organization, and safety are daily requirements.
- Work with alignment couplings, belts, and taper lock pulleys.
- Programme PLCs for general I/O base systems.
- Replace air handler filters, documenting airflow CFM, replacement or adjust tension of belts, pulleys and tensioners.
- Verify if materials install meet manufactures' recommend installation requirement or UL listing and/or usage.
- Conduct research for software and hardware enhancements and other special projects such as data encryption, anti-virus implementation and storage solutions.
- Prepare and issue IQ, OQ, PQ validation packages for customers, maintain results in IQMS ERP system.
- Maintain document data spreadsheet file via SharePoint for all applicable groups.
- Prepare cumulative production and IP rates for regulatory reporting.

Difference Between an Engineer, Engineering Technologist & a Technician

■ *Engineers*

- *Solving tomorrow's problems today by applying science to the design and manufacture of a product*
- *Requires a 4 year degree*

■ *Engineering Technologist*

- *Develops the process to make the engineers product – focus on application*
- *Requires a 4 year degree*

■ *Technician*

- *Install, repair or maintain the product designed by the engineer and produced by the engineering technologist*
- *Requires a 2 year degree*

Technologist Duties

- ▶ primary technologist responsibility:
 - interface between scientist/engineer level and technician/skilled worker level
- ▶ act as *communicators* between management/engineering and skilled laborers
 - need good listening, speaking, writing, and interpretation skills!
- ▶ be the *implementers* who interpret management's ideas and make them happen
 - allows engineers/scientists to do what they do best
- ▶ perform *calibration and testing* procedures
 - to insure proper equipment operation



Education paths:

An Engineer has a 4-year university degree

A Technologist has a 3-year college diploma

A Tradesperson has completed an 1800 hour vocational diploma

<https://utec.edu.uy/en/education/undergraduate-study/technologist-degree-in-industrial-mechanics/>

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TECHNOLOGIST DEGREE IN INDUSTRIAL MECHANICS

Managing efficiency, safety and sustainability of the industry.

[Home](#) / [Education](#) / [Technologist Degree in Industrial Mechanics](#)



Location:
Paysandú



Mode:
Presencial



Duration:
3 years





+ABOUT THE DEGREE

This degree trains professionals capable of developing tasks of relative complexity related to technologies in the fields of mechanical engineering, maintenance, production and management, as well as offering the possibility to join teamwork to carry out the same activities in more complex situations, in terms of their characteristics and scale.

In order to ensure the minimum knowledge, skills and abilities for the graduate profile, the Study Plan will cover four contents that are classified into the following categories: Basic, Technological and Complementary.

The graduates of this career may, if they wish, continue their studies in the career of Mechanical Industrial Engineering or other careers of the Faculty of Engineering, being recognized a certain amount of credits by the Council of the Faculty of Engineering. This program is managed by UTEC in the interior of the country. Certification is granted by UTEC, UdelaR and UTU.

Graduates from this degree will be competent to:

- Carry out technical tasks in the following areas: Plant Engineering, with an emphasis in the use of energy in industrial services and knowledge of materials, contemplating maintenance and service administration.
- Maintenance of equipment and facilities (planning, supervision, documentation).
- Mechanical Design Engineering, with an emphasis on knowledge of materials and manufacturing processes for the design of facilities, machines or products and/or their modifications.
- Industrial Production (control, organization, supervision, quality control).
- Administration (provision of supplies, costs).
- Project development.
- Occupational safety.

As well as joining teamwork to carry out the same activities in more complex situations, both due to its characteristics and its scale.

Taller 3: Máquinas
herramientas ⓘ

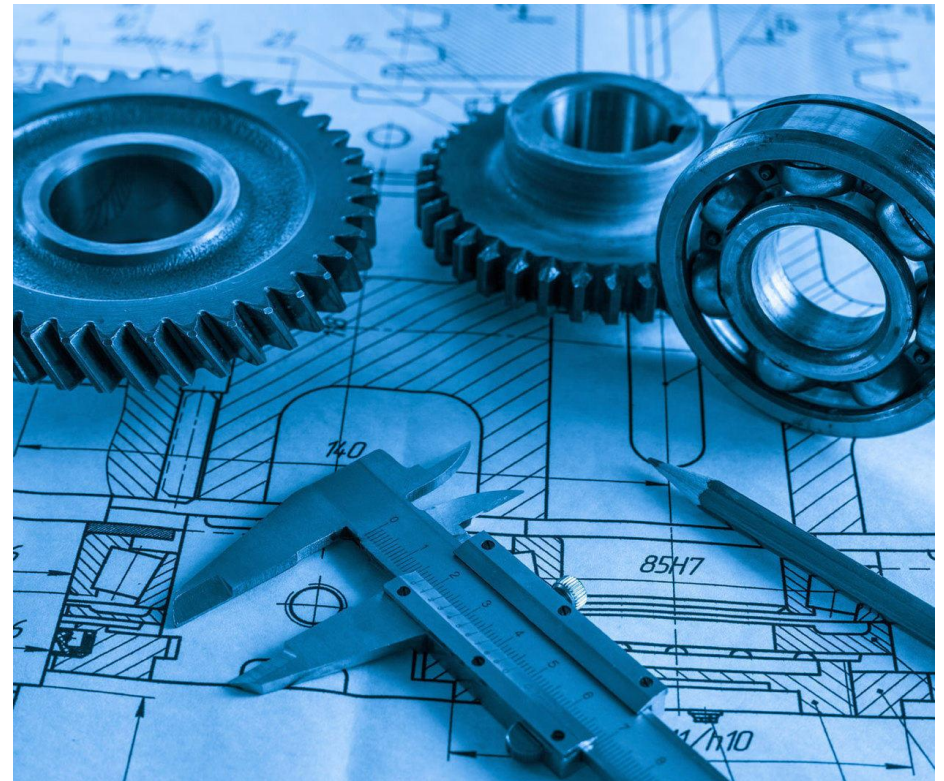
Taller 4: Motores
de combustión
interna ⓘ

Creditos 8. El curso de ingles tecnico le permite al estudiante acceder a fuentes de información de su interés escritas en inglés. Adquirir habilidad en la interpretación de texto. Adquirir un nivel de comprensión lectora que resulte aplicable en la lectura extensiva de temas de Ingeniería Mecánica. Manejar terminología en lectura elemental. Reconocer estructuras gramaticales de la lengua inglesa.

Inglés Técnico ⓘ

Gestión del
Mantenimiento ⓘ

What is mechanics?



mechanics

Mechanics is the science of bodies in **1** in a frame of reference. If you're a physicist and your specialty is *mechanics*, you most likely study the way physical bodies are affected by **2** and how they affect their environment.

Mechanics is one branch of physics — and some mathematicians are also focused on mechanics. You can divide this field of study into classical mechanics and quantum mechanics, but in either case it involves the study of motion and the forces that cause or result from motion. You can also use the noun *mechanics* when you talk about the inner **3** or details of something, like the mechanics of baseball or the mechanics of the banking industry.

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Mechanical Engineering Technology is the application of engineering principles and technological developments for the creation of useful products and production machinery.

Technologists

Mechanical engineering technologists are expected to apply current technologies and principles from machine and product design, production and material and manufacturing processes.

Expandable specialties may include aerospace, automotive, energy, nuclear, petroleum, manufacturing, product development, and industrial design.

Mechanical engineering technologists can have many different titles, including in the United States:

Mechanical Engineering Technologist

Mechanical Engineer

Product Engineering Technologist

Mechanical Designer

Product Development Engineering Technologist

Manufacturing Engineering Technologist



<http://www.differencebetween.net/miscellaneous/difference-between-technician-and-technologist/>

<https://www.canton.edu/csoet/elec/technician.html>



cnudde10@gmail.com



Questions?

Comments?

Suggestions?



THANK YOU