

**MINISTRY OF EDUCATION AND TRAINING**  
**HUE COLLEGE OF AGRICULTURE AND FORESTRY**  
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**A COURSE OF ENGLISH**  
**FOR STUDENTS OF AGRICULTURAL ENGINEERING**



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## LỜI MÔU ÑAÀU

“*A course of English for students of agricultural engineering*” là giáo trình tiếng Anh chuyên ngành có thể dùng làm tài liệu giảng dạy hoặc tài liệu tham khảo cho sinh viên ngành cơ điện nông nghiệp, ngành kỹ thuật cơ khí nông nghiệp của trường Đại Học Nông Lâm và Đại Học Sư Phạm (ngành kỹ thuật).

Giáo trình này được biên soạn trên cơ sở sinh viên đã học qua chương trình tiếng Anh cơ bản; có vốn kiến thức cơ bản về ngữ pháp tiếng Anh và kiến thức cơ bản về các chuyên ngành liên quan đến cơ điện; sinh viên có nhu cầu phát triển kỹ năng đọc, viết và dịch tiếng Anh chuyên ngành cơ điện nông nghiệp. Do đó mục đích của giáo trình là:

- Giúp sinh viên làm quen với văn phong tiếng Anh khoa học kỹ thuật.
- Rèn luyện kỹ năng đọc hiểu các văn bản khoa học.
- Cung cấp cho sinh viên các từ, thuật ngữ chuyên ngành.
- Luyện thực hành viết và dịch một số cấu trúc ngữ pháp thường gặp.

Với đối tượng của giáo trình là sinh viên năm thứ 3 trường Đại Học Nông Lâm Huế và thời lượng dành cho môn học là 60 tiết (4 đơn vị học trình), giáo trình này gồm 10 units và một số bài đọc thêm. Các bài text được trích dẫn hoặc phỏng theo các tài liệu khoa học nhằm đảm bảo tính xã thực của văn bản. Các bài tập ngữ pháp được biên soạn theo ngữ pháp tiếng Anh cơ bản và kết hợp các kiến thức chuyên ngành cơ điện cơ bản mà sinh viên đã được học.

Việc biên soạn giáo trình này chắc chắn không tránh khỏi những khiếm khuyết. Chúng tôi mong nhận được góp ý xây dựng của độc giả và người học để giáo trình ngày càng hoàn thiện hơn.

Lê Thị Thanh Chi

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## PART I: ELECTRICAL AND MECHANICAL ENGINEERING



### UNIT 1: Engineering – What's it all about ?

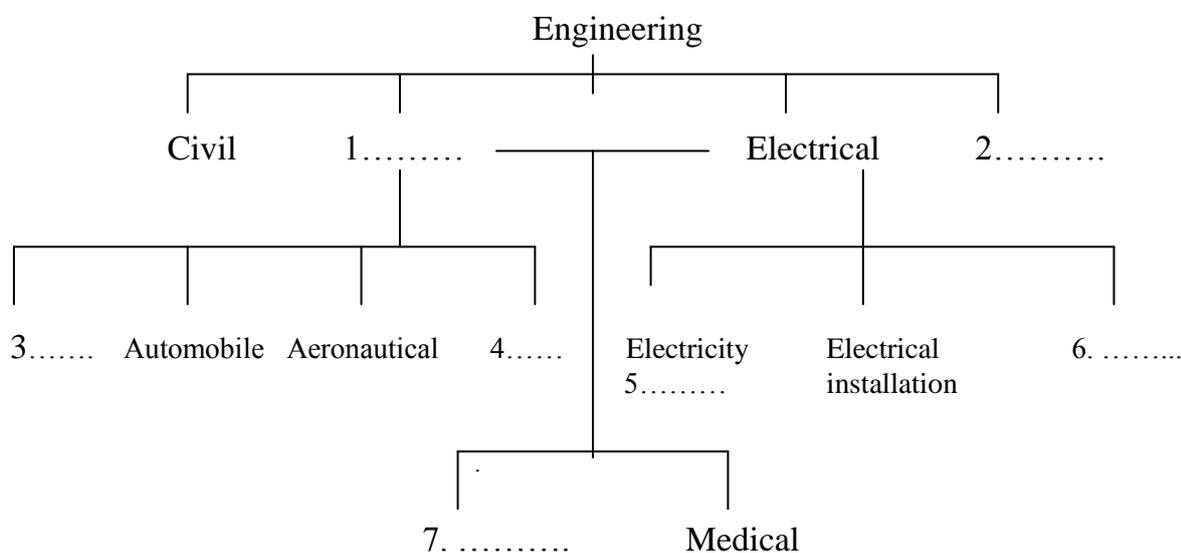
#### A. Reading:

1. Read the following passage and find out how many branches of engineering are mentioned.

Engineering is largely a practical activity. It is about putting ideas into action. Civil engineering is concerned with making bridges, roads, airports, etc. Mechanical engineering deals with the design and manufacture of tools and machines. Electrical engineering is about the generation and distribution of electricity and its many applications. Electronic engineering is concerned with developing components and equipment for communications, computing, and so on.

Mechanical engineering includes marine, automobile, aeronautical, heating and ventilating, and others. Electrical engineering includes electricity generating, electrical installation, lighting, etc. Mining and medical engineering belong partly to mechanical and partly to electrical.

2. Complete the blanks in this diagram using information from the text.



3. Study these special words. They show some of the areas in which engineers work. Can you identify them? What kinds of engineers are concerned with these areas – electrical, mechanical or both?

**Beer brewery – planes - super highway – blocks of building – X ray machine**

Now read the following texts to check your answer. Match each text to one of the word or phrase above.

Transport: cars, trains, ships and planes are all products of mechanical engineering. Mechanical engineers are also involved in support services such as roads, rail track, harbours and bridges.

Food processing: Mechanical engineers design, develop and make the machines and the processing equipment for harvesting, preparing and preserving the foods and drinks that fill

the supermarket.

Medical engineering: Body scanners, X-ray machines, life-support systems, and other high-tech equipment result from mechanical and electrical engineers combining with medical experts to convert ideas into life-saving and preserving products.

Building services: Electrical engineers provide all the services we need in our homes and places of work, including lighting, heating, ventilation, air-conditioning, refrigeration, and lifts.

Energy and power: Electrical engineers are concerned with the production and distribution of electricity to homes, offices, industry, hospitals, colleges and schools, and the installation and maintenance of the equipment involved in these processes.

(Source: Adapted from *Turning Ideas into Action*, Institution of Mechanical Engineers, and *Engineering a career*, Institution of Electronics and Electrical Incorporated Engineers)

4. When you read, it is important to have a clear purpose. Here are some of the purposes you may have for reading the texts. Match one purpose to each kind of text.

- | A  | B                           |
|--|-----------------------------|
| 1. finding a job                               | a. table                    |
| 2. pricing a component                         | b. index                    |
| 3. finding out how to do something             | c. contents                 |
| 4. choosing the best chapter to read           | d. book title               |
| 5. looking for specific information on a topic | e. manual                   |
| 6. learning about electrical equipment         | f. price list of components |
| 7. choosing a course                           | g. college brochure         |
| 8. looking for a specification                 | h. job advertisement        |

5. Fill in the gaps in this text with the words given below. Each gap represents one word. Compare your answer with your partner.

In the United Kingdom you can ...(1)... engineering at a college of further education or a university. Most college courses ...(2)... from one to two years. University undergraduate course ...(3)... engineering last from three to four years.

A college will take ...(4)... after four years of secondary school education. Most students study full-time, ...(5)... day-release courses are available for people who ...(6)... in local engineering companies. Students will be given a certificate ...(7)... a diploma at the ...(8)... of their course.

Most university students will have completed six ...(9)... of secondary school. Others will have taken a diploma course at college. ...(10)... give degrees. A Bachelor's degree ...(11)... three to four years. A Master's ...(12)... requires a further year.

*Students / degree / last / years / in / work / end / study  
/ universities / or / but (although) / takes*

**B. Language study:** *deals with / is concerned with*

What is the link between column A and column B ?

A	B
mechanical	machines
electrical	electricity

Column A lists a branch of engineering or a type of engineer. Column B lists things they are concerned with. We can show the link between them in a number of ways:

1. Mechanical engineering *deals with* machines.
2. Mechanical engineers *deal with* machines.
3. Mechanical engineering *is concerned with* machines.
4. Mechanical engineers *are concerned with* machines.
5. Machines *are the concern of* mechanical engineers.

Match each item in column A with an appropriate item from column B and link the two in a sentence.

A	B
1. marine	a. air-conditioning
2. aeronautical	b. roads and bridges
3. heating and ventilating	c. body scanners
4. electricity generating	d. cables and switch-gear
5. automobile	e. communication and equipment
6. civil	f. ships
7. electronic	g. planes
8. electrical installation	h. cars and trucks
9. medical	i. power stations

### C. Word study: *Word stress*

Words are divided into syllables. For example:

engine	en.gine
engineer	en.gin.eer
engineering	en.gin.eer.ing

Each syllable is pronounced separately, but normally only one syllable is stressed. That means it is said more slowly and clearly than the other syllables. We say 'engine but engin'eer. A good dictionary will show the stress syllables.

- Look at these words. Try to mark the stressed syllable.

- |                 |                 |
|-----------------|-----------------|
| 1. machinery    | 2. mechanical   |
| 3. machine      | 4. install      |
| 5. installation | 6. electricity  |
| 7. electrical   | 8. electronic   |
| 9. aeronautical | 10. ventilation |

### New words and expressions:

- Engineering (n.):	ngành kỹ thuật
- civil engineering:	kỹ thuật dân dụng
- mechanical engineering:	kỹ thuật cơ khí
- deal with:	liên quan đến
- putting ideas into action:	chuyển ý tưởng thành hành động
- manufacture (v.):	sản xuất
- electricity generation:	sự phát điện
- distribution of electricity:	sự phân phối điện năng
- marine(n. & adj.):	(thuộc về) hàng hải
- aeronautical(adj.):	(thuộc) ngành hàng không
- heating and ventilating:	sưởi và thông gió
- food processing	chế biến thực phẩm
- harvesting:	thu hoạch
- preserving:	bảo quản
- maintenance (n.):	bảo dưỡng, bảo trì (máy móc)
- power station:	trạm điện năng

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### LANGUAGE IN FOCUS

#### Using adverb clauses to show time relationships:

<i>after</i>	(a) <i>After</i> she graduates, she will get a job. (b) <i>After</i> she (had) graduated, she got a job	A present tense, <i>not</i> a future tense is used in an adverb clause of time. Notice example (b) and (d).
<i>before</i>	(c) I will leave <i>before</i> he comes. (d) I (had) left <i>before</i> he came.	
<i>when</i>	(e) <i>When</i> I arrived, he was talking on the phone. (f) <i>When</i> I got there, he had already left. (g) <i>When</i> it began to rain, I stood under a tree. (h) <i>When</i> I was in Chicago, I visited the museum. (i) <i>When</i> I see him tomorrow, I will ask him.	When = at that time (notice the different time relationship expressed by the tenses)
<i>While</i> <i>As</i>	(j) <i>While</i> I was walking home, it began to rain. (k) <i>As</i> I was walking home, it began to rain.	While, as = during that time
<i>By the time</i>	(l) <i>By the time</i> he arrived, we had already left. (m) <i>By the time</i> he comes, we will already have left.	By the time = one event is completed before another event. (notice the use of the

		past perfect and future perfect in the main clause)
<i>Since</i>	(n) I haven't seen him <i>since</i> he left this morning.	Since = from that time to the present. (Notice the present perfect is used in the main clause)
<i>Until</i> <i>till</i>	(o) We stayed there <i>until</i> we finished our work. (p) We stayed there <i>till</i> we finished our work.	Until, till = to that time and then no longer (till is used primarily in speaking rather than writing)
<i>As soon as</i> <i>Once</i>	(q) <i>As soon as</i> it stops raining, we will leave. (r) <i>Once</i> it stops raining, we will leave.	As soon as, once = when one event happens, another event happens soon afterwards.
<i>As long as</i> <i>So long as</i>	(s) I will never speak to him again <i>as long as</i> I live. (t) I will never speak to him again <i>so long as</i> I live	As soon as, so long as = during all that time, from beginning to end.
<i>Whenever</i> <i>Every time</i>	(u) <i>Whenever</i> I see her, I say hello. (v) <i>Every time</i> I see her, I say hello.	Whenever = every time
<i>The first time</i> <i>The last time</i> <i>The next time</i>	(w) <i>The first time</i> I went to New York, I went to an opera. (x) I saw two plays the last time I went to New York. (y) The next time I go to New York, I'm going to see a ballet.	Adverb clauses can be introduced by the following: first The second time third last next

## PRACTICE

### A. Complete the following. Pay attention to verb tenses.

- Last night I went to bed after I \_\_\_\_\_ my homework.
- Tonight I will go to bed after I \_\_\_\_\_ my homework.
- Ever since I was a child, I \_\_\_\_\_ afraid of dogs.
- Jane's contact lens popped out while she basketball.
- Be sure to reread your composition for errors before you \_\_\_\_\_ it in to the teacher tomorrow.
- By the time I left my apartment this morning, the mail carrier \_\_\_\_\_ the mail.
- I have known Jim Bates since he \_\_\_\_\_ ten years old.
- A black cat ran across the road as I \_\_\_\_\_ my car to work this morning.
- By the time I leave this city, I \_\_\_\_\_ here for four months.
- Whenever Mark \_\_\_\_\_ angry, his nose gets red.
- I \_\_\_\_\_ to the beach whenever the weather was fine, but now I don't have time to do that because I have to study.
- We will have a big party when \_\_\_\_\_.

13. The next time I \_\_\_\_\_ to Hawaii, I'm going to visit Mauna Loa, the world largest volcano.

14. I had fried chicken the last time I \_\_\_\_\_ at that restaurant.

**B. Complete the following sentences. Punctuate carefully. Pay attention to verb tense usage.**

1. Just as I was falling asleep last night .....

2. I'll help you with your homework as soon as I .....

3. .... as long as I live.

4. Just before I .....

5. The last time I .....

6. I had already ..... when .....

7. Whenever .....

8. I will be here until I .....

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## UNIT 2: ENGINEERING MATERIALS

### A. Reading: *Scanning tables*

In engineering, it is important to practice reading tables, charts, diagrams, and graphs because so much information is represented in these ways.

Scanning is the best strategy for finding information in a table. With scanning, you know before you read what sort of information you are searching for. To scan a table, you move your eyes up and down the columns until you find the word or words you want. To scan quickly, you must learn to ignore any information which will not help you with your task.

1. Scan the table which follows to find a material which is:
  - a. soft
  - b. ductile
  - c. malleable
  - d. tough
  - e. scratch-resistant
  - f. conductive and malleable
  - g. durable and hard
  - h. stiff and brittle
  - i. ductile and corrosion-resistant
  - j. heat-resistant and chemical-resistant

Materials	Properties	Uses
<b>Metal</b> Aluminium	Light, soft, ductile, highly conductive, corrosion-resistant	Aircraft, engine components, foil, cooking utensils.
Copper	Very malleable, tough & ductile, highly conductive, corrosion-resistant.	Electric wiring, PCBs, tubing
Brass (65% copper, 35% zinc)	Very corrosion-resistant. Casts well, easily machined. Can be work hardened. Good conductor.	Valves, taps, castings, ship fittings, electrical contacts
Mild steel (iron with 0.15% to 0.3% carbon)	High strength, ductile, tough, fairly malleable, cannot be hardened and tempered, low cost, poor corrosion resistance	General purpose
High carbon steel (iron with 0.7% to 1.4% carbon)	Hardest of the carbon steels but less ductile and malleable. Can be hardened and tempered.	Cutting tools such as drills, files, saws
<b>Thermoplastics</b> ABS	High impact strength & toughness, scratch-resistant, light & durable	Safety helmets, car components, telephones, kitchenware