JOHNEDMONDSONHIGHSCHOOL
Assessment Notification

Faculty: Industrial Arts Course: Engineering Studies Year: 11

Assessment Task: Biomedical Engineering Research Task

Assessment Weighting: 30% Due: Term 3 Week 5 - 23/8/2024

Task Type: Hand in Task ☒ In Class Task ☐ Practical Task ☐

Outcomes assessed (NESA)
P1.1 identifies the scope of engineering and recognises current innovations P2.2 describes the nature of engineering in specific fields and its importance to society P3.1 uses mathematical, scientific and graphical methods to solve problems of engineering practice P3.2 develops written, oral and presentation skills and applies these to engineering reports P4.1 describes developments in technology and their impact on engineering products P4.3 identifies the social, environmental and cultural implications of technological change in engineering P5.1 uses communication and information processing skills P5.2 applies management and planning skills related to engineering P6.1 applies knowledge and skills in research and problem-solving related to engineering
Task Description/Overview
Analyse one Biomedical product – **MUST BE SUBMITTED VIA CANVAS AS AN ATTACHMENT THAT YOU UPLOAD BY 8:25 ON THE DUE DATE**
Detailed Assessment Task Description
Students are to choose ONE biomedical product and research the following: - Product history - Role of inventor - Technologies - Current projects - Health, safety and ethics - Training and careers

Assessment Criteria

Grade	Description	Mark Range
Outstanding (O)	The student has an extensive knowledge and understanding of the content and can readily apply this knowledge. In addition, the student has achieved a very high level of competence in the processes and skills and can apply these skills to new situations.	**90-100**
High (H)	The student has a thorough knowledge and understanding of the content and a high level of competence in the processes and skills. In addition, the student is able to apply this knowledge and these skills to most situations.	**80-89**
Sound (S)	The student has a sound knowledge and understanding of the content and has achieved a good level of competence in the processes and skills.	**60-79**
Basic (B)	The student has a basic knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills.	**30-59**
Limited (L)	The student has an elementary knowledge and understanding in a few areas of the content and still required further work to achieve competence in the processes and skills.	**0-29**

Satisfactory completion of courses

A course has been satisfactorily completed, when the student has:

- Followed the course developed/endorsed by the NSW Educational Standards Authority(NESA)
- Applied himself/herself with diligence and sustained effort to the set tasks and experiences provided in the course.
- Achieved some or all of the course outcomes

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Assessment Notification Sheet

Faculty: Technology **Subject:** Engineering Studies **Year: Preliminary**

Assessment Task: 2

Assessment Weighting: 30 %

Due Date: 23rd August, 2024 Friday week 5

Task type : hand in ☒ in class ☐ practical ☐

Outcomes / competencies being assessed (include number and letter)
P1.1, P2.2, P3.1, P3.2, P4.1, P4.3, P5.1, P5.2, P6.1
Task Description / Overview
Biomedical Engineering – Engineering Report
Assessment Task

Chosen Biomedical Product: .....

The following are the biomedical options you may choose from:

- Artificial Heart
- Pacemakers
- Artificial heart valves
- Knee implants
- Hip implants
- Prosthetic limbs
- Cochlear implants
- Dental implants
- Bionic eye
- Any of your choosing (must email suggestion first for it to be accepted)

A. Students are to use their **chosen biomedical product** as a focus to research the following aspects of the **Biomedical engineering profession**.

Research information should be gathered from:

- The syllabus
- Internet sites
- Course notes
- Library
- Textbooks

B. Each student will write and submit an individual, word-processed engineering report (using diagrams and graphics where possible) addressing the following aspects:

- History of the product, including the person/s who invented/developed the item.
- What role did the 'inventor' have in bringing the product to the market? Did it have to go through regulatory approval before marketing the product? Did they have to go through clinical trials, e.t.c?
- Analyse the technologies utilised in the development and use of the product, including materials, production methods and use/implantation.
- Current projects and innovations in this area of biomedical engineering
- Analyse the health, safety and ethical issues related to the profession and community
- Describe the necessary training for a biomedical engineering career and prospects for employment.

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Assessment Marking Guidelines / Criteria

Faculty : Technology **Subject :** Engineering Studies **Year : Preliminary**

Assessment Task: 2

Assessment Weighting: 30 %

Due Date: 23rd August, 2024 Fri Week 5

Task type : hand in ☒ in class ☐ practical ☐

Biomedical Engineering Report - Marking Criteria		**Marks Achieved**
Product Name:		**TOTAL /100**
1. Product history	**Accurate & detailed analysis of the history and development of the product** 7 - 10 Accurate & reasonable analysis 4 - 6 Poor analysis 0- 3	/10
2. Role of inventor	**Accurate & detailed description of inventor's role** 7 - 10 Accurate & reasonable description 4 - 6 Poor description 0- 3	/10
3. Technologies	**Accurate & detailed analysis of materials, production and use** 20 - 30 Accurate & reasonable analysis of some aspects 10 - 20 Inaccurate or poor analysis 1 - 10	/30
4. Current projects	**Accurate and detailed information** 7 – 10 Some accurate and reasonable information 4 – 6 Poor information 0 - 3	/10
5. Health, safety, ethics	**Accurate and detailed information** 7 – 10 Some accurate and reasonable information 4 – 6 Poor information 0 - 3	/10
6. Training and careers	**Accurate and detailed information** 7 – 10 Some accurate and reasonable information 4 – 6 Poor information 0 - 3	/10
7. Presentation/Communication	**Presentation follows report guidelines and is well laid out** 0 – 10 **Communication uses diagrams, pictures & is well referenced** 0 - 10	/10 /10