

202.057 Mechanical properties of biological tissue.
2021W
January 10th, 2022
Institute for Mechanics of Materials and Structures
TU WIEN

Please fill-in your answers within the provided blank spaces. Next, send the filled document before 15:00 from today to the following email address experimental.determination+e202@tuwien.ac.at

The next sections were filled by myself. I acknowledge that any detection of cheating will result in a grade of zero percent. *(tick the box)*

Name

Matrikelnummer

1. What is a biomaterial?

Answer 1

2. What is a hierarchical material?

Answer 2

3. Capacity of the material to function with a specific application within the living host is:

A. Biomimetic B. Biocompatibility C. Biological synthesis D. None of the above

Answer 3

4. Name and describe the types of bones found in a human body?

Answer 4

5. Strain ratios are defined by the Eqs. [1, 2]. In which cases are the ratios numerically equal and different?

$$\epsilon = \frac{L - L_o}{L_o} \quad (1)$$

$$\epsilon' = \frac{L - L_o}{L} \quad (2)$$

Answer 5

6. What is an RVE?

Answer 6

7. The characteristic length of the RVE ℓ_{RVE} needs to be the scale of the characteristic loading of the medium \mathcal{L} ?

A. much larger than B. much smaller than C. equal to

Answer 7

Grading:

<i>Question 1:</i>	/16
<i>Question 2:</i>	/16
<i>Question 3:</i>	/10
<i>Question 4:</i>	/16
<i>Question 5:</i>	/16
<i>Question 6:</i>	/16
<i>Question 7:</i>	/10
<i>Final grade:</i>	/100

91-100% = 1
81-90% = 2
66-80% = 3
50-65% = 4
0-49% = 5