**Aim of the study**

Examine how GAG synthesis and stiffness of the chondrocyte/agarose constructs are influenced by the agarose gel concentration and culture period.

**Marking Criteria for Cell and Tissue Engineering Practical**

Structure of the technical report

* **Abstract** should introduce the topic, present the aims and objectives of the study and summarise the major key findings of the research (250 words).
* **Introduction** should include a brief summary describing the relationship between nutrient utilization and loss in cell viability in 3D alginate or agarose hydrogels. This introduction should lead to your research questions (300 words)
* The **methods** section should give brief details on cartilage isolation and culture in agarose gel, quantification of GAG and mechanical testing. Include how you will perform statistical analysis for comparisons between treatment conditions eg. Student t-test, ANOVA (200 words)
* The **results** section should describe the GAG and mechanical testing data presented with clear figures either as a bar chart or table. All figures should have a figure legend. The data must be presented as the **mean** values with standard deviations included in the graph. You should include statistical comparisons on the figures (eg. Student t-test comparing day 0 with day 7 for GAG synthesis or mechanical testing data) (200 words)
* **Discussion** should compare studies on how to improve nutrient utilisation, prevent oxygen/glucose gradients (eg. with bioreactors) and maximise anabolic (GAGs) pathways via mechanotransduction mechanisms (700 words)
* **References** should be cited throughout the report (except abstract and results). There is no word limit for references (up to 10 relevant references).

**Maximum** word count (total) = 1650 words

**Student Check List**

Have you addressed the following?

* + Writing (in prose, correctness of English, length) – Basic
  + Layout, quality of images, tables (both with titles and numbers referenced in the text), homogeneity of text, widowing, content list, font styles, format etc – Basic
  + Structure, clarity and logic of argumentation (eg. title page, abstract, introduction, methods, results, discussion, references) – Basic
  + Avoidance of plagiarisms, correct referencing (figures, text) – basic
  + Content selection, selection of sources, understanding of sources, critical thinking – intermediate
  + Effort, appropriate self directed studying – intermediate
  + Originality – Advanced
  + Critical Review (relevance of the topic, arbitrariness/completeness of the sources, reliability of source material) – Advanced
  + References