1. **Title of the module**

LABS604 Biopharmaceuticals and Gene Therapy

1. **School or partner institution which will be responsible for management of the module**

Centre for Higher and Degree Apprenticeships (CHDA)

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 6

1. **The number of credits and the ECTS value which the module represents**

15 Credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Flexible delivery model

Autumn and/or Spring and/or Summer

1. **Prerequisite and co-requisite modules**

N/A

1. **The programmes of study to which the module contributes**

BSc (Hons) in Applied Bioscience

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Describe in detail how proteins, polypeptides and monoclonal antibodies can be used as biopharmaceuticals.

8.2 Develop an understanding of the basic principles of gene therapy, including gene delivery and expression.

8.3 Apply the basic principles of pharmacogenetics.

8.4 Develop an in-depth understanding of the methods used to identify genetic variation.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1 Develop and demonstrate an ability to analyse, evaluate and correctly interpret data.

9.2 Present and communicate data effectively and confidently.

9.3 Obtain and use information from a variety of sources as part of self-directed learning.

9.4 Manage their time and use their organisation skills within the context of self-directed learning.

9.5 Develop and demonstrate an ability to work and communicate effectively with others.

1. **A synopsis of the curriculum**

Biopharmaceuticals

Proteins and polypeptides as therapeutic agents

Monoclonal antibodies as therapeutic agents

Basic principles of pharmacogenetics

Gene delivery

Controlling gene expression

Safety issues associated with gene therapy

Therapeutic areas for gene therapy

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Humphrey P. Rang, James M. Ritter, Graeme Henderson, Rang, H (2015) Rang & Dale's Pharmacology, 8th edition. Elsevier.

1. **Learning and teaching methods**

Blended distance learning:

Contact Hours: 100 hours

Private Study Time: 50 hours

Total Learning Time: 150 hours

1. **Assessment methods**
   1. Main assessment methods

2000 word Essay – 40%

2 hour Examination – 60%

The pass mark for each individual assessment is 40%.  All assessments must be passed in order to pass the module.

13.2 Reassessment methods

Like for Like

1. ***Module learning outcomes (sections 8 & 9) to learning and teaching methods (sectin12) and methods of assessment (section 13)***

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| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| Online material/ Recorded Lectures | **x** | **x** | **x** | **x** |  |  |  | **x** |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |
| Work-based experience |  |  |  |  | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Essay | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Examination | **x** | **x** | **x** | **x** |  |  |  |  | **x** |

1. **Inclusive module design**

The School/Collaborative Partner *(delete as applicable)* recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Blended distance learning – delivered from Medway or Canterbury campus

1. **Internationalisation**

Biopharmaceutical and Gene Therapy is a core component of the Pharmaceutic R & D industry and this module reflects international aspects. With regards to the intended learning outcomes, in particular 8.3, the target learning outcomes within this module are applicable worldwide as part of the universal principles of Bioscience. With regard to subject content, the material within the syllabus is applied to a range of international contexts.

**FACULTIES SUPPORT OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

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| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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