

Gene Structure and Function

Learning Outcomes

1. Demonstrate an in-depth understanding of the normal process of production of proteins from DNA and how this can go wrong to cause mutation.
2. Analyse, synthesise and summarise information – in particular be able to interpret DNA sequence in terms of the genetic code and protein production, manipulation of the DNA sequence and analysis of pedigrees
3. Demonstrate an in-depth understanding of how mutations act to cause clinical conditions.
4. Critically discuss current issues in molecular genetics

Core Dimensions

CD1 Communication

Since learners are asked to demonstrate knowledge all learning outcomes will map to level 2 "Communicate with a range of people on a number of matters."

in particular items a-c

- a) communicates with a range of people on a range of matters in a form that is appropriate to them and the situation
- b) improves the effectiveness of communication through the use of communication skills
- c) constructively manages barriers to effective communication

In addition LO5 will map to level 3 a-c "Develop and maintain communications with people about difficult matters and/or in difficult situations" and possibly level 4 a-c "Develop and maintain communications with people on complex matters, issues and/or in complex situations"

level 3

- a) identifies the range of people likely to be involved in the communication, any potential communication differences and relevant contextual factors
- b) communicates with people in a form and manner that:
 - is consistent with their level of understanding, culture, background and preferred ways of communicating
 - is appropriate to the purpose of the communication and the context in which it is taking place
 - encourages the effective participation of all involved
- c) recognises and reflects on barriers to effective communication and modifies communication in response

level 4

- a) identifies:
 - the range of people involved in the communication
 - potential communication differences
 - relevant contextual factors
 - broader situational factors, issues and risks
- b) communicates with people in a form and manner which:
 - is consistent with their level of understanding, culture, background and preferred ways of communicating
 - is appropriate to the purpose of the communication and its longer term importance
 - is appropriate to the complexity of the context

- encourages effective communication between all involved
 - enables a constructive outcome to be achieved
- c) anticipates barriers to communication and takes action to improve communication

CD2 Personal and people development

Similarly all learning contributes to personal development and again the need to demonstrate knowledge will involve others, thus mapping to level 2 “Develop own skills and knowledge and provide information to others to help their development”

In particular a-c & f

- a) assesses and identifies:
- feedback from others on own work
 - how s/he is applying knowledge and skills in relation to the KSF outline for the post
 - own development needs and interests in the current post
 - what has been helpful in his/her learning and development to date
- b) takes an active part in the development review of own work against the KSF outline for the post with their reviewer and suggests areas for learning and development in the coming year
- c) takes responsibility for own personal development and takes an active part in learning opportunities
- f) offers information to others when it will help their development and/or help them meet work demands.

Other core dimensions

No specific mapping

Specific Dimensions

Health and Wellbeing

HWB8 Biomedical investigations and interventions

The knowledge gained in satisfying these learning outcomes should be equivalent to that required for level 3 “Plan, undertake, evaluate and report biomedical investigations and/or interventions”

- a) evaluates relevant information to plan the range and sequence of biomedical investigations/interventions required and determines:
- the specific procedures to be undertaken
 - unusual aspects of cases (including any particular risks)
 - the urgency with which procedures need to be carried out
 - relevant legislation, policies and procedures
- b) selects appropriate methods, techniques, equipment and analytical methods, in line with the resources available and evidence of effectiveness
- c) carries out and monitors investigations/interventions in line with established procedures and protocols, taking the appropriate action in the case of incidents which put at risk health and safety or the quality of specimens
- d) evaluates the outcomes of investigations/interventions and takes appropriate action in relation to anomalous or poor quality results or insufficient information
- e) collates and interprets findings and outcomes and reports them to relevant colleagues in the appropriate format, clearly stating any limitations
- f) provides valid information, advice and recommendations in relation to diagnosis, prognosis, treatment and individual management.

Information and Knowledge

IK2 Information Collection and analysis

LO 2 and to some extent LO 1 & 3 will map to

Level 3 "Gather, analyse, interpret and present extensive and/or complex data and information"

In particular b, f & g

b) identifies appropriate and valid sources which can provide data and information of sufficient quality and quantity

f) collates and analyses data and information using methods appropriate to:

- the initial questions/issues to be addressed
- the nature of the data and information

g) interprets, appraises and synthesises data and information appropriately and identifies:

- consistency and inconsistency in outcomes
- any limitations in the analyses used and continually holds issues raised open to

question