CRITICAL REVIEW OF BIOSCIENCE LITERATURE - 2024/5

Module code: BMSM029

Module Overview

The ability to appraise scientific literature and to communicate ideas is an academic and professional skill required across many areas of the biosciences. Journal clubs are convened in research and clinical environments and are used by professionals to continue to update knowledge of their disciplines and to maintain competencies as scientists; educators, and clinicians. The ability to distil and critique literature into a short review is also an important skill for the ongoing development of professionals in this area.

By Level 7, students will already have a sound understanding of the importance of valid scientific information, and the role of the peer-review process in assuring rigour and integrity. This module develops skills in critical appraisal of scientific literature through a journal club whereby recent publications across a representative range of biomedical science disciplines are discussed in regular sessions facilitated by research students; post-doctoral, and academic staff.

A literature review of an appropriate biomedical topic will further develop approaches to using online databases and selecting appropriate publications, together with writing skills. The progress of this piece of work is supported by one-to-one tutorials.

Module provider

School of Biosciences

Module Leader

ELLIOTT Gill (Biosciences)

Number of Credits: 15

ECTS Credits: 7.5

Framework: FHEQ Level 7

Module cap (Maximum number of students): N/A

Overall student workload

Personal Tutorial Hours: 3

Workshop Hours: 8

Independent Learning Hours: 122

Seminar Hours: 10

Guided Learning: 4

Captured Content: 2

Module Availability

Semester 2

Prerequisites / Co-requisites

None

Module content

Indicative content includes:

Seminars (5h):

Uses and abuses of scientific information: the importance of peer-review

Scientific journals: scope and impact

Science reporting in the media

How to prepare an outstanding journal club presentation and pithy critique

Preparing a critical and analytical literature review

Journal clubs (8h): Each student will attend four journal club meetings, where students will be required to present and discuss a journal article of their choice. They will also provide a critique of the paper for those attending They will be guided by their tutor and academic staff or PGRs/postdocs present at the club.

Tutorials (3h): Students will be assigned a tutor for their literature reviews who will hold three one-to-one tutorials to support students as they progress with their independent work

Assessment pattern

Assessment type	Unit of assessment	Weighting
Coursework	Article critique	20
Oral exam or presentation	Journal Club presentation	30
Coursework	Literature review	50

Alternative Assessment

N/A

Assessment Strategy

The assessment strategy is designed to provide students with the opportunity to demonstrate:

Appreciation of the importance of accurate and high-quality communication of science.

Ability to appraise scientific literature for a range of bioscience disciplines and topics.

Ability to discuss recent advances and developments in the biosciences.

Ability to accurately summarise research literature.

Ability to communicate research findings in salient topics, through the production of a literature review.

Evaluate the quality of information and the validity of conclusions presented in scientific papers.

Development of communication skills in group discussions.

Knowledge of the scope of different Citation of references using a standard format.

Thus, the summative assessment for this module consists of:

- One research article critique, 20% 1000 words (addresses learning outcomes 1, 2, 4, 5, 6, 7)
- One journal club presentation, 30% (addresses learning outcomes 1, 4, 5, 6, 7, 8)
- One literature review, 50% 3000 words (addresses learning outcomes 1, 2, 3, 4, 6)

Formative assessment and Feedback.

Students will get instant feedback during journal club meetings where they can assess and reflect on the development on their critical analysis skills and their overall engagement and participation in the Journal Club. Students can also obtain individual feedback from their tutor and the module organizer. Their tutor will also assess the progress of their literature review by assessing their draft review at different stages of production. Students will meet their assigned tutor on a one-to-one basis on three occasions to discuss progress with the literature review and will receive feedback on their work to date.

Module aims

- Develop the ability to analyse the quality, impact, and validity of research journal articles
- Develop confidence and aptitude in appraising primary literature
- Develop competence in summarising primary literature
- Appraise the quality of science reporting in the press and other forms of media
- Guide students through the process of writing review of the literature
- Develop digital capabilities by identifying databases through which peer-reviewed scientific literature can be found
- Develop competence in using standard citation methods

Learning outcomes

		Attributes Developed
001	Appraise the scientific literature within a chosen biomedical science discipline	KCT
002	Cite references using standard formats	KPT
003	Communicate ideas, principles and research through the production of a literature review	KCPT

		Attributes Developed
004	Appreciate the importance of accurate and high quality communication of science	CP
005	Appraise the essential components of a research paper within the field of a chosen biomedical sciences discipline	KCT
006	Critically assess the strengths and weaknesses of scientific research	KPT
007	Construct an effective journal article critique	CT
008	Compose a written summary of a journal club critique	KC
009	Contribute to informal public discussions confidently	

Attributes Developed

C - Cognitive/analytical

K - Subject knowledge

T - Transferable skills

P - Professional/Practical skills

Methods of Teaching / Learning

The learning and teaching strategy is designed to:

Develop a critical understanding of the scientific literature through facilitated self-directed learning. The skills gained on this module are directly transferable to all other modules on the programme, and to the wider science profession.

The learning and teaching methods include:

Seminars, workshops, and class discussion where different sources of scientific information will be explored, informing students of the range of resources available and how to assess them

One-to-one tutorials where students will discuss their work with their individual tutor who will guide them in their use of specific resources and how to focus their reviews. This will aid them in deciding the content and structure of their final literature reviews

Journal clubs will be interactive group sessions where a student will lead by presenting and providing a critique of a journal article. All other students will be expected to have read the article in advance and be able to discuss and question. Students will gain skills around presenting, explaining, and discussing scientific articles. These are important for future careers and employability.

Indicated Lecture Hours (which may also include seminars, tutorials, workshops and other contact time) are approximate and may include in-class tests where one or more of these are an assessment on the module. In-class tests are scheduled/organised separately to taught content and will be published on to student personal timetables, where they apply to taken modules, as soon as they are finalised by central administration. This will usually be after the initial publication of the teaching timetable for the relevant semester.

Reading list

https://readinglists.surrey.ac.uk

Upon accessing the reading list, please search for the module using the module code: BMSM029

Other information

None

Programmes this module appears in

Programme	Semester	Classification	Qualifying conditions
Biomedical Science MSci (Hons)	2	Compulsory	A weighted aggregate mark of 50% is required to pass the module

Please note that the information detailed within this record is accurate at the time of publishing and may be subject to change. This record contains information for the most up to date version of the programme / module for the 2024/5 academic year.