

BL3302 Gene Regulation

(BL3302 online module handbook version 97)

Credits: 20

Semester: 1

Module Organiser

Dr Stuart MacNeill

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Pre-requisite Modules:

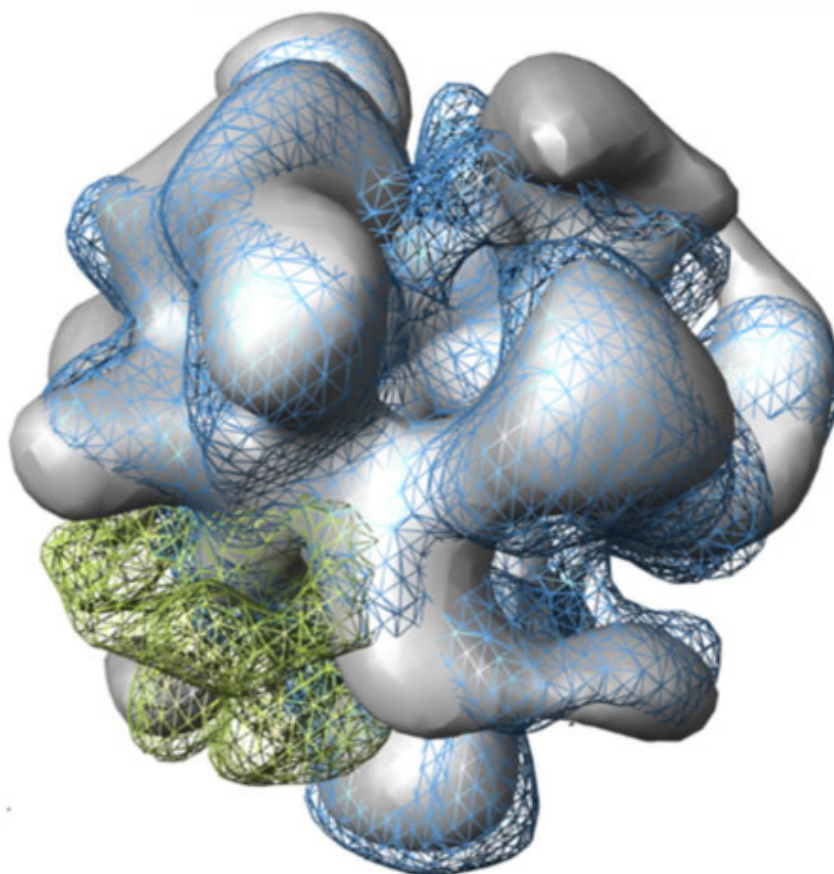
Before taking this module you must pass BL2302 and (pass BL2306 or pass BL2309)

Anti-requisite Modules:

Post-requisite Modules:

Additional Module Information:

[Please check MMS regularly for additional module information](#)



This module builds on material covered in BL2302 Molecular Biology. It first considers the structure of genes and the composition of genomes and then examines genetic activity in eukaryotes in relation to nuclear organisation, chromatin structure and epigenetic mechanisms. Regulation of expression at the levels of gene transcription, RNA processing, RNA stability and translation are next covered in detail, drawing particular attention to the nature of protein-nucleic acid interactions. Specific control mechanisms in different prokaryotic and eukaryotic systems, induced by environmental, cell cycle, and metabolic signals are highlighted.

[BL3302View content for BL3302 \(2023/4\) in the Module Management System \(MMS\)](#)

[View the current Biology Online Module Catalogue for BL3302](#)

[BL3302View BL3302 \(2023/4\) in the University of St Andrews Module Catalogue](#)

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BL3302: Timetable

Legend (not all modules have every event type):

lecture	tutorial	workshop	practical	other
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Semester 1: Week 1

DATE & TIME	VENUE	STAFF	EVENT
Monday 11-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Stuart MacNeill -	Other O1: Introduction <small>2023-4_BL3302_O1</small> Session will be recorded
Tuesday 12-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L1: Transcription 1 <small>2023-4_BL3302_L1</small> Session will be recorded
Wednesday 13-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L2: Transcription 2 <small>2023-4_BL3302_L2</small> Session will be recorded

Semester 1: Week 2

DATE & TIME	VENUE	STAFF	EVENT
Monday 18-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L3: Transcription 3 <small>2023-4_BL3302_L3</small> Session will be recorded
Tuesday 19-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L4: Transcription 4 <small>2023-4_BL3302_L4</small> Session will be recorded
Wednesday 20-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L5: Transcription 5 <small>2023-4_BL3302_L5</small> Session will be recorded

Semester 1: Week 3

DATE & TIME	VENUE	STAFF	EVENT
Monday 25-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L6: Transcription 6 <small>2023-4_BL3302_L6</small> Session will be recorded
Tuesday 26-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Lecture L7: Transcription 7 <small>2023-4_BL3302_L7</small> Session will be recorded
Wednesday 27-09-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Simon Young -	Workshop W1: Data analysis workshop <small>2023-4_BL3302_W1</small> Session will be recorded

Semester 1: Week 4

DATE & TIME	VENUE	STAFF	EVENT
Monday 02-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Stuart MacNeill -	Workshop W2: Introduction to review writing <small>2023-4_BL3302_W2</small> Session will be recorded
Tuesday 03-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Helder Ferreira -	Lecture L8: Chromatin, histone code, etc. 1 <small>2023-4_BL3302_L8</small> Session will be recorded
Wednesday 04-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Helder Ferreira -	Lecture L9: Chromatin, histone code, etc. 2 <small>2023-4_BL3302_L9</small> Session will be recorded

Semester 1: Week 5

DATE & TIME	VENUE	STAFF	EVENT
Monday 09-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Susan Gurney -	Workshop W3: Introduction to lab 1 <small>2023-4_BL3302_W3</small>

Tuesday 10-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Helder Ferreira -	Lecture L10: Chromatin, histone code, etc. 3 <small>2023-4_BL3302_L10</small> Session will be recorded
Wednesday 11-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Helder Ferreira -	Lecture L11: Chromatin, histone code, etc. 4 <small>2023-4_BL3302_L11</small> Session will be recorded
Thursday 12-10-2023 09:00 to 17:00	Biomolecular Sciences Building Teaching Lab RM205	Dr Susan Gurney Dr Stuart MacNeill	Practical P1: Lab 1 (day 1) <small>2023-4_BL3302_P1</small>
Friday 13-10-2023 09:00 to 17:00	Biomolecular Sciences Building Teaching Lab RM205	Dr Susan Gurney Dr Stuart MacNeill	Practical P2: Lab 1 (day 2) <small>2023-4_BL3302_P2</small>

Semester 1: Week 7

DATE & TIME	VENUE	STAFF	EVENT
Monday 23-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Helder Ferreira -	Workshop W4: Data analysis workshop <small>2023-4_BL3302_W4</small> Session will be recorded
Tuesday 24-10-2023 10:00 to 11:00	Online Moodle	Dr Stuart MacNeill -	Other O2: Moodle quiz 1 <small>2023-4_BL3302_O2</small>
Wednesday 25-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Susan Gurney -	Workshop W5: Introduction to lab 2 <small>2023-4_BL3302_W5</small>

Semester 1: Week 8

DATE & TIME	VENUE	STAFF	EVENT
Monday 30-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Judith Sleeman -	Lecture L12: RNA processing and nuclear dynamics 1 <small>2023-4_BL3302_L12</small> Session will be recorded
Tuesday 31-10-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Judith Sleeman -	Lecture L13: RNA processing and nuclear dynamics 2 <small>2023-4_BL3302_L13</small> Session will be recorded
Wednesday 01-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Judith Sleeman -	Lecture L14: RNA processing and nuclear dynamics 3 <small>2023-4_BL3302_L14</small> Session will be recorded
Thursday 02-11-2023 09:00 to 17:00	Biomolecular Sciences Building Teaching Lab RM205	Dr Susan Gurney Dr Stuart MacNeill	Practical P3: Lab 2 (day 1) <small>2023-4_BL3302_P3</small>
Friday 03-11-2023 09:00 to 17:00	Biomolecular Sciences Building Teaching Lab RM205	Dr Susan Gurney Dr Stuart MacNeill	Practical P4: Lab 2 (day 2) <small>2023-4_BL3302_P4</small>

Semester 1: Week 9

DATE & TIME	VENUE	STAFF	EVENT
Monday 06-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Judith Sleeman -	Lecture L15: RNA processing and nuclear dynamics 4 <small>2023-4_BL3302_L15</small> Session will be recorded
Tuesday 07-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Judith Sleeman -	Workshop W6: Data analysis workshop <small>2023-4_BL3302_W6</small> Session will be recorded
Wednesday 08-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Susan Gurney -	Workshop W7: Introduction to lab 3 <small>2023-4_BL3302_W7</small>

Semester 1: Week 10

DATE & TIME	VENUE	STAFF	EVENT
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Monday 13-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Jo Hobbs -	Lecture L16: Translation 1 2023-4_BL3302_L16 Session will be recorded
Tuesday 14-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Jo Hobbs -	Lecture L17: Translation 2 2023-4_BL3302_L17 Session will be recorded
Wednesday 15-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Jo Hobbs -	Lecture L18: Translation 3 2023-4_BL3302_L18 Session will be recorded
Thursday 16-11-2023 09:00 to 17:00	Biomolecular Sciences Building Teaching Lab RM205	Dr Susan Gurney Dr Stuart MacNeill	Practical P5: Lab 3 (day 1) 2023-4_BL3302_P5
Friday 17-11-2023 09:00 to 17:00	Biomolecular Sciences Building Teaching Lab RM205	Dr Susan Gurney Dr Stuart MacNeill	Practical P6: Lab 3 (day 2) 2023-4_BL3302_P6

Semester 1: Week 11

DATE & TIME	VENUE	STAFF	EVENT
Monday 20-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Jo Hobbs -	Lecture L19: Translation 4 2023-4_BL3302_L19 Session will be recorded
Tuesday 21-11-2023 10:00 to 11:00	Biomolecular Sciences Building Seminar Room RM001	Dr Jo Hobbs -	Workshop W8: Data analysis workshop 2023-4_BL3302_W8 Session will be recorded
Wednesday 22-11-2023 10:00 to 11:00	Online Moodle	Dr Stuart MacNeill -	Other O3: Moodle quiz 2 2023-4_BL3302_O3

BL3302: Reading List

[BL3302Click for BL3302 reading list](#)

BL3302: Assessment

3-hour Written Examination = 50%, Coursework = 50%

[BL3302View coursework assessment details for BL3302 \(2023/4\) in MMS](#)

The following related information applies to all Biology modules:

School of Biology Marking Criteria:	See JH booklet info (st-andrews.ac.uk)
Late submission of continuous assessment work:	All late submissions of coursework that do not require electronic submission should be made via the Biology Teaching Office, Level 2, BMS Building, North Haugh.
Exam details:	See School of Biology UG Handbook JH booklet info (st-andrews.ac.uk) : All Biology exams will be conducted online for 2022-23.
Exam timetable:	See Timetables - Exams - University of St Andrews (st-andrews.ac.uk)
Expected attendance:	See JH booklet info (st-andrews.ac.uk) for detailed attendance requirements.
Good Academic Practice & Avoiding Academic Misconduct:	See JH booklet info (st-andrews.ac.uk)
University Student Handbook:	University Student Handbook
School and University regulations in the School and University Undergraduate Handbook relating to absence reporting, penalties and rules for late submission of work, extensions for coursework, return of coursework, S-coding, good academic practice and Academic Alerts.:	JH booklet info (st-andrews.ac.uk) University Student Handbook

Who to ask

(Information in this section applies to all Biology Modules)

Before contacting staff, students should check the content of the Biology Undergraduate Handbook, the module handbook and specific task instructions.

Questions about

General teaching matters
Rescheduled or cancelled events
Lecture or practical content
Completing assessed practical assignments
Completing assessments
Marking on continuous assessment
Marking on exams
Rearranging practical days
Absence and/or extensions
Difficulties with academic progress which impact more than one module:
Overall performance, progress or future directions:
Disability:
For advice and support on any issue e.g. academic, financial, international, personal or health matters, or if you are unsure of who to go to for help:

University assistance with urgent matters out of office hours:

Contact

Biology Teaching Office (bioteach@st-andrews.ac.uk)
Check your University email
The lecturer who presented the material
The lecturer who set the assignment
Module Organiser ([Dr Stuart MacNeill sam31@st-andrews.ac.uk](mailto:DrStuartMacNeill@st-andrews.ac.uk))
The Demonstrator or Module Organiser ([Dr Stuart MacNeill sam31@st-andrews.ac.uk](mailto:DrStuartMacNeill@st-andrews.ac.uk))
Module Organiser ([Dr Stuart MacNeill sam31@st-andrews.ac.uk](mailto:DrStuartMacNeill@st-andrews.ac.uk))
Module Organiser ([Dr Stuart MacNeill sam31@st-andrews.ac.uk](mailto:DrStuartMacNeill@st-andrews.ac.uk))
Module Organiser ([Dr Stuart MacNeill sam31@st-andrews.ac.uk](mailto:DrStuartMacNeill@st-andrews.ac.uk)) **and** the Biology Teaching Office (bioteach@st-andrews.ac.uk)
Year Coordinator
See School of Biology UG Handbook for list: [JH booklet info \(st-andrews.ac.uk\)](http://www.st-andrews.ac.uk/jh-booklet-info)
Advisor of Studies
Disability Coordinator (biodisabilities@st-andrews.ac.uk)
Advice & Support Centre
Address: 79 North Street, St Andrews
Email: theasc@st-andrews.ac.uk
Web: <https://www.standrews.ac.uk/ask-a-question/>
Tel: 01334 462020
Tel: 01334 476161
Web: <https://www.st-andrews.ac.uk/students/advice/counselling/incrisis/>

Biology Teaching Office:

We are happy to hear from you about teaching matters. The School of Biology Teaching Office is open Monday to Friday 09.00 - 13.00 and 14.00 - 17.00. School of Biology staff will respond to your emails during these hours. Our team will provide a response to you within three working days.

Biology Teaching Office (Level 2), University of St Andrews, Biomolecular Sciences Building, North Haugh, St Andrews, Fife KY16 9ST

Email: bioteach@st-andrews.ac.uk

Tel: 01334 46 3602 or 3566

BL3302: Contributing Staff

Dr Stuart MacNeill
(Module Organiser)

[Dr Helder Ferreira](#)

[Dr Susan Gurney](#)

[Dr Jo Hobbs](#)

[Dr Stuart MacNeill](#)
(Module Organiser)

[Dr Judith Sleeman](#)

[Dr Simon Young](#)

SULSA Reader in Translational
Biology

Lecturer

Associate Lecturer in Biology

Lecturer in Molecular Microbiology

SULSA Reader in Translational
Biology

Senior Lecturer in Cell and
Developmental Biology

Associate Lecturer (Education
focused)

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jkh26@st-andrews.ac.uk

sam31@st-andrews.ac.uk

jes14@st-andrews.ac.uk

say2@st-andrews.ac.uk

BL3302: Learning Outcomes

Students completing module BL3302 successfully should be able to:

- be able to demonstrate a good knowledge and understanding of the topics outlined in this module
- be able to apply this knowledge and understanding to the specific areas of study in other modules
- be able to read research papers and listen to research talks with a better understanding
- be able to express clearly the content of research papers
- record experimental results and interpret data as well as report findings and conclusions in a precise and clear manner

BL3302: Acquired Skills

Practical Skills

- Agarose gel
- DNA isolation
- Handling microbes
- Pipetting
- Polymerase Chain Reaction (PCR)
- Protein purification
- Restriction digest
- SDS PAGE
- Western Blot

Transferable Skills

- Review article on given topic
- Lab safety awareness
- Concentrations
- Dilutions
- Lab or field notebook
- Designing experiments
- Working in pairs/small groups

Policies

(Information in this section applies to all Biology Modules)

- The procedures and regulations followed by the School of Biology are outlined in the [University Handbook](#) and in the School of Biology UG handbook [JH booklet info \(st-andrews.ac.uk\)](#)
- All coursework associated with the module must be completed and submitted by its due date.
- Specific School regulations relating to absence reporting, penalties and rules for late submission of work, extensions for coursework, return of coursework, S-coding, Good Academic Practice and Academic Alert are stated in the School of Biology UG handbook [JH booklet info \(st-andrews.ac.uk\)](#) and students are required to carefully read these regulations.
- Students are also referred to the University Handbook, available at: <http://www.st-andrews.ac.uk/studenthandbook/>