

Faculty of Science

Augmented Remote Teaching, Learning, and Assessment (ARTLA)

First Semester 2021

*“In this time of great uncertainty and volatility, we nevertheless strive to provide the **best possible service** to all our stakeholders. SU offers **world-class learning and teaching** and **unique campus experiences**. By **working together**, we believe we can provide these opportunities and at the same time promote health and safety.”*

Prof Stan du Plessis, COO, 26 February 2021

For the academic offering in the 1st semester of 2021, Stellenbosch University has planned for three scenarios, depending on the national and DHET lockdown level restrictions regarding the allowed number of students on campus and the allowed number of people in on-campus venues. In all three scenarios we will be offering **Augmented Remote Teaching, Learning, and Assessment (ARTLA)**.

In the Faculty of Science this means that a significant component of teaching and learning will continue **asynchronously** and all students on a **rotational basis** will have the benefit of **compulsory synchronous** teaching and learning **activities**. There is flexibility and differentiation in synchronous teaching and learning approaches. This is to accommodate the disciplinary differences, concerns about health and safety of staff and students, and the availability of COVID-compliant venues and labs with suitable access and technology. Together we will strive for an enriching teaching and learning experience while promoting our health and safety.

In practice, the **default approach** to ARTLA in the Faculty of Science will be:

All **lectures will be offered asynchronously**, that is, the lecture material and videos will be uploaded on the SUNLearn site for the module and students will be required to read/watch these in preparation for compulsory synchronous teaching and learning activities.

For the **compulsory synchronous teaching and learning activities** students will need to participate at a scheduled timetable slot in a

- f2f session (eg. practical, field work)
- or
- live session via Teams.

There is no expectation that both modes are available for each teaching and learning activity during a scheduled timetable slot.

Further approaches include:

- **Face-to-face (f2f):** The teaching and learning activity is offered in a physical classroom or facility with lecturers/facilitators and students present in person. F2F learning allows for different teaching and learning methodologies to be used and can contain a blend of traditional classroom methods and online interaction.
- **Augmented**
 - **Type 1:** Synchronous (real-time) streaming and recording of f2f learning opportunities with limited number of students in venue.
 - **Type 2:** Asynchronous provision of material and f2f learning opportunities (with limited number of students in venue) are used to explain pre-recorded material.
 - **Type 3:** Asynchronous provision of material and f2f learning opportunities (with limited number of students in venue) are used for question and answer sessions.
- For some modules, a compulsory synchronous teaching and learning activity for the week may be offered as a f2f session during some timetable slots and as a live session via Team during some other timetable slots.

A possible lesson plan for the default offering is:

Lesson plan Example	Asynchronous Data light	Synchronous	
		Online	F-2-F
Prep i.e. submit a summary/complete quiz Differentiated LO	Read/watch online material and submit a PPT summary on SUNLearn	Read/watch online material and submit a PPT summary on SUNLearn	
Introductions	Short video introduction of topic: video and/or text, let them see your face	Short introduction of topic: live, switch on video for a while let them see your face	Short introduction of topic: in person, in class
Check i.e. muddiest point Diagnostic test	Clicker question (short answer format) – URL in SUNLearn topic	Clicker question (short answer format) – URL in chat	Clicker question (short answer format) – URL in PPT
Breakaway groups designing exam questions active learning	SUNLearn Discussion forum, where students work and chat in groups in an asynchronous manner.	Teams breakaway rooms discussions (advice on “netiquette” and organizational pointers)	F-2-F small group discussions
Response to breakaway task	Pick 3 random questions and review in follow-up post on forum (video/text)	Pick 3 random questions and review Live	
Follow up on muddiest point Diagnostic test	Follow-up clicker (“how muddy is it now?”) on responses - URL in SUNLearn topic	Look through responses during break away groups - follow-up clicker (“how muddy is it now?”) on responses - live	

The tables hereafter indicate the teaching and learning approach that will be used for first semester modules. Further details will be available in the module frameworks on SUNLearn from 8 March 2021. Additional information on the academic offering for the 1st semester will be shared from time to time and therefore we encourage you to keep an eye on the [Faculty of Science Undergraduate Students](#) website and the [COVID-19 Latest Updates](#) website. You can also send specific queries to scienceadmin@sun.ac.za.

5 March 2021

First-year modules :

	Lectures	Tutorials	Practicals	Assessment
Science in Context	Augmented Type 2	Augmented Type 2	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Biology 124	All submodules 1-4: Asynchronous online lectures and weekly synchronous Q&A	N/A	Submodules 1-3: synchronous online tutorials/ f2f rotational tutorials Submodule 4: asynchronous online	A1: Online or invigilated A2, A3: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Chemistry 124	Augmented Type 2	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Science 113, 114	Augmented Type 2/3	Augmented Type 3	Augmented Type 3	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Skills 171	Augmented Type 2/3	n/a	n/a	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Mathematics 114	Asynchronous online with 2 synchronous live sessions per week	f2f	n/a	TESTS & EXAMS: Some online, some invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Mathematics (bio) 124	Augmented Type 2/3	Online	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Online

Physics 114	Asynchronous online	Synchronous: f2f attendance is advised, but synchronous online attendance will also be accommodated.	Synchronous: f2f attendance is advised, but synchronous online attendance will also be accommodated.	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Sit-down during f2f sessions or online if attending online.
Physics (bio) 134	Asynchronous online	Augmented Type 2	Augmented Type 2 (Mostly do-at-home pracs with f2f in labs as possible)	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Physiology 114	Augmented Type 3	Augmented Type 3	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Probability Theory and Statistics 114	Augmented Type 2	Augmented Type 2	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online

Second-year modules:

	Lectures	Tutorials	Practicals	Assessment
Industrial Chemistry C224	Augmented Type 3	f2f	augmented	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Applied Mathematics 214	Augmented Type 2	Augmented Type 2	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Biochemistry 214	Asynchronous online	Asynchronous online	Practicals 1 & 3: Compulsory f2f experiments in the laboratory (with limited number of students in venue). Practicals 2 & 4: Fully online	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
BDE 212	f2f	n/a	12 Online statistical practicals 1 f2f practical	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
BDE 214	Asynchronous online	n/a	f2f practicals or discussion sessions	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
BDE 224	Submodule 1: f2f Submodules 2 & 3: Asynchronous online lectures + 1 non-compulsory f2f session/week for the muddiest moments	n/a	11 compulsory f2f practicals	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Chemistry 214	Augmented Type 2/3	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Online

Chemistry 234	Augmented Type 2	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Science 214	Augmented Type 3	Augmented Type 3	Augmented Type 3	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Skills 272	Augmented Type 2	Augmented Type 2	Augmented Type 3	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Environmental Geochemistry 214	f2f	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Geology 224	f2f	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Mathematics 214	Asynchronous online with at least one synchronous live Teams session per week	Augmented Type 3 and Synchronous live Teams sessions	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Mathematics 278	Online with synchronous live Teams sessions	Online with synchronous live Teams sessions	n/a	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Microbiology 214	Asynchronous online	Augmented Type 3	f2f	A1: 1 invigilated on campus; 1 online A2, A3: invigilated on-campus
				Tutorial Tests, Quizzes, etc some online,

				some invigilated on-campus
Physics 224	1 st term: Augmented Type 3	1 st term: Augmented Type 1	f2f	TESTS & EXAMS: invigilated on-campus
	2 nd term: f2f	2 nd term: f2f		Tutorial Tests, Quizzes, etc online
Physiology 214	Augmented Type 3	Augmented Type 3	Augmented Some online; some f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Scientific Computing 372	Augmented Type 2	Augmented Type 2	Augmented Type 2	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online

Third-year modules :

	Lectures	Tutorials	Practicals / Field work	Assessment
Applied Chemistry 324	Augmented Type 2	Augmented Type 2	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Applied Chemistry 334	f2f	Augmented Type 2	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Applied Chemistry 315	f2f	Augmented Type 2	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
	Augmented	Augmented	n/a	TESTS & EXAMS: invigilated on-campus

Applied Mathematics 314, 324	Type 2	Type 2		Tutorial Tests, Quizzes, etc online
Biochemistry 315 Section A	Asynchronous online	Augmented Type 3	n/a	TESTS & EXAMS: invigilated on-campus and online
				Tutorial Tests, Quizzes, etc online
Biochemistry 315 Section B	Asynchronous online	Augmented Type 3	n/a	TESTS & EXAMS: invigilated on-campus and online
				Tutorial Tests, Quizzes, etc online
Biochemistry 315 Section C	Augmented Type 3	Asynchronous online	n/a	TESTS & EXAMS: invigilated on-campus and online
				Tutorial Tests, Quizzes, etc Online
Biochemistry 323	Augmented Type 3 (voluntary f2f)	Asynchronous online	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Bioinformatics 312	Asynchronous online	f2f	Online	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Biomathematics 374	f2f	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
BDE 315	f2f discussions and student presentations and synchronous online	n/a	f2f practicals in small groups and largely flexi-time throughout 1 st term	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Online

BDE 324	Submodule 1: f2f	n/a	f2f in botanical garden	TESTS & EXAMS: invigilated on-campus
	Submodule 2: Asynchronous online + non-compulsory f2f session/week for muddiest moments Submodule 3: Asynchronous online + non-compulsory f2f discussion sessions in the Botanical garden Submodule 4: Asynchronous online Submodule 5: Asynchronous online + non-compulsory f2f in the Botanical garden			Tutorial Tests, Quizzes, etc online
BDE334	Submodules 1-3: Asynchronous online, with one weekly session of non- compulsory rotational f2f contact	n/a	f2f practicals / discussion sessions in smaller groups	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Chemistry 314, 324	f2f	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Science 314, 334, 315	Augmented Type 2/3	Augmented Type 3	Augmented Type 3	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Skills 372	Augmented Type 2/3	n/a	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
	f2f	f2f	f2f	TESTS & EXAMS: invigilated on-campus

Environmental Geochemistry 314				Tutorial Tests, Quizzes, etc Online
Financial Mathematics 378	f2f	f2f	f2f	TESTS & EXAMS: Some online, some invigilated on-campus
				Tutorial Tests, Quizzes, etc Some online, some invigilated on-campus
Geology 314, 324	f2f	f2f	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Mathematics 314 Mathematics 324	f2f	f2f	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Online
Mathematics 325	Asynchronous online	Asynchronous online with one synchronous live Teams session per week	n/a	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Mathematics 378	Online with synchronous live Teams sessions	Online with synchronous live Teams sessions	n/a	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Microbiology 314, 324	Asynchronous online	Online/ Augmented Type 2/3	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Some online, some invigilated on-campus
Physics 314, 334	f2f	f2f	N/A	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online

Physics 384	f2f	n/a	f2f	Year module – tests invigilated on-campus
Physiology 314, 334	Augmented Type 3	Augmented Type 3	Augmented Some online; some f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Scientific Computing 372	Augmented Type 2/3	n/a	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online

Modules for the Faculty of Engineering and Faculty of Medicine and Health Sciences

	Lectures	Tutorials	Practicals	Assessment
Applied Mathematics B124	Augmented Type 1/2/3	Augmented Type 1/2/3	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Applied Mathematics B224	Augmented Type 1/2/3	Augmented Type 1/2/3	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Chemistry for Health Sciences 111	Asynchronous online	Asynchronous online	augmented	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Industrial Chemistry C224	Augmented Type 2/3	Augmented	f2f	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Computer Science E214	Augmented Type 1/2/3	Augmented Type 3	Augmented Type 3	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Engineering Geology 214	Augmented Type 1	Augmented Type 1	Augmented (balance of fully online and fully f2f)	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Engineering Mathematics 115	Augmented Type 3	Augmented Type 3	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
			n/a	TESTS & EXAMS: invigilated on-campus

Engineering Mathematics 214	Asynchronous online	Online with voluntary f2f sessions		Tutorial Tests, Quizzes, etc online
Engineering Physics 113	Augmented Type 2	Augmented Type 2	Online (do at home pracs)	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online

EDP Modules: First Semester 2021

	Lectures	Tutorials	Practicals / Field work	Assessment
Mathematics 176	f2f	f2f	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Mathematics 186	Augmented Type 2 Students will be divided into 2 groups to accommodate the 50% restriction. Student groups will attend lectures in a computer venue on a rotational basis. A typical lecture day will have one group in the computer lab with the lecture while the other group will work online remotely on the same online content.	Augmented The (two) groups will attend 60 minute tutorials on a rotational basis. A typical tutorial session will have one group in a venue with the lecturer. Thus: The weekly 2-hour tutorial will be divided into 2 sessions: Group 1: 11:00 - 12:00 Group 2: 12:00 - 13:00	n/a	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Chemistry 176	f2f	f2f	Augmented 3x online pracs in first and second semester via learning Science UK resource centre. Total 6 online pracs Plan A: 2x Pracs - one in first semester and one in second semester, with 50% lab occupancy. Plan B: to have a week/2 weeks of practicals during the second exam opportunity in June. A full week/2 weeks would be ideal.	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc online
Physics 176	Augmented Type 2	Augmented Type 3	f2f (1 practical spread over whole semester for small sections of the class at any time)	TESTS & EXAMS: invigilated on-campus
				Tutorial Tests, Quizzes, etc Online

University Practice 176	Asynchronous online Five weeks of Achieving Academic Success by Mrs M Coetzee Six weeks of iFlourishWell4Life by Dr A du Plessis Two weeks of Science in Practice by Dr W Stone (possibly f2f but not confirmed yet)	n/a	Considering a f2f trip to the Stellenbosch Water Treatment Plant with Dr Stone (if practical due to COVID) as part of the Science in Practice section. This will also be in preparation for the Science in Practice project of the second semester.	A series of online assessments and activities
Computer Skills 176	Augmented Type 2/3	Augmented	Augmented	TESTS & EXAMS: online
				Tutorial Tests, Quizzes, etc online
Scientific Communication Skills 116 (second semester)	Augmented: 6 timeslots/week 3 x f2f 3 x online 1 theory lesson f2f	Augmented: 1 timeslot/week: F2f writing in class 1 timeslot/week (not compulsory): Q & Answer session f2f Online: Reading lab Language activity	n/a	Summative (flexible assessment): A series of in class and online assessments and activities. Learning outcomes are ultimately tested by the completion of a written project.