

Degree of Bachelor of Science

AES-BS1 Structure of the Degree

The following applies to degrees based on majors (see Rule AES-BS4) and on Focussed Programmes (see Rule AES-BS5):

- (a) the minimum duration for the qualification is 6 semesters;
- (b) the qualification requires that a set of modules with a total credit value of at least 384 be passed, subject to the following conditions:
- (i) at least 128 credits shall be at Level 3;
 - (ii) at least 96 credits shall be at Level 2;
 - (iii) at least 96 credits shall be at Level 1; and
 - (iv) the unspecified credits may include elective modules with a combined credit value not exceeding 32, offered in any other College within the University, subject to approval of the Dean and Head of School offering the module. These external credits shall be counted at Level 1.
- (c) In order to complete the qualification, students registered for the first time from 2014 must pass or obtain credit for ZULN101, unless otherwise exempted in terms of Rule GR8.

AES-BS2 Common Curriculum

All students enrolled in any Bachelor of Science programme must follow a common curriculum in the first semester of their first year. This is further divided into two broad groupings:

- *Life and Earth Sciences (LES)* stream, which encompasses programmes and majors within the Life Sciences, Geology, Geography and Environmental Sciences; and
- *Mathematical Sciences (M)* stream, which encompasses programmes and majors within the disciplines of Computer Science, Mathematics, Physics and Statistics.

Chemistry can fit into either grouping depending on the choice of a second major.

The modules for the first semester are as follows:

LES stream

CHEM110 16 credits

MATH130 or MATH150 16 credits

and two further modules selected from

BIOL101 16 credits

PHYS131 or PHYS110 16 credits

GEOL101 16 credits (not offered in Pietermaritzburg)

GEOG110 16 credits

M stream

MATH130 16 credits

and three further modules selected from

CHEM110 16 credits

COMP100 16 credits

ECON101 16 credits

PHYS110 16 credits

STAT130 16 credits

Notes:

- (i) *In majors and programmes in the LES stream MATH150 may be replaced by MATH130. Moreover PHYS131 may be replaced by PHYS110. Some programmes may require one or both of these replacements.*

(ii) *Other combinations of electives may be permitted at the discretion of the School.*

AES-BS3 Structure of the Degree based on Majors

In addition to Rules AES-BS1 and AES-BS2, the following applies to degrees based on majors:

- (a) no more than 64 credits may be specified at Level-2, of which at least 32 and no more than 48 shall be in modules specified for a primary major subject (from List A below); the balance of the Level-2 modules may be from subjects given in Lists A, B or C.
- (b) at least 64 and no more than 80 credits at Level-3 shall be in modules specified for primary major subject from List A below, with the balance from modules in other subjects given in Lists A, B or C;
- (c) except as provided for in (d) below, all Level-1 and Level-2 modules shall come from disciplines in Lists A or B, or modules mentioned in List C;
- (d) the unspecified credits points may, subject to the approval of the Dean and Head of School, contain elective modules with a combined credit value not exceeding 32, offered in any college (these external credits shall be counted at Level-1); and
- (e) students may major in more than one discipline. In that case, no more than 16 credits at exit level may be counted towards both majors.
- (f) Credit will not be given for modules, offered in another College, whose content is broadly contained within modules offered by the College.

List A (primary major subjects):

Applied Mathematics	Geography
Astronomy	Hydrology
Biochemistry	Mathematics
Biology	Microbiology
Cellular Biology	Physics
Chemistry	Plant Pathology
Computer Science	Soil Science
Ecology	Statistics
Genetics	

List B (other major subjects):

- Economics
- Psychology (Pietermaritzburg only).

List C (other recognised modules):

- any module specified for a particular programme in which the student is registered;
- Any module in a subject offered in the College, for which the pre-requisites have been met.

AES-BS4 Rules of Combination for Majors

The tables below give the modules needed to major in a particular discipline. Numbers in parentheses denote the number of credits for a module. The remaining credits (to ensure that

Rule AES-BS1 is satisfied) must be drawn from other modules in accord with Rules AES-BS2 and AES-BS3.

Please note that this Handbook contains only modules to be taught in 2017. The modules listed in first year are for first-year students, those for second year are for second-year students and so on. Students in first year should not assume that the modules listed below will be the same by the time they reach second and higher years.

Please note that electives in the first Semester of first year must accord with Rule AES-BS2.

Students may be required to register for focussed programmes if their combinations of major disciplines are available within a focussed programme.

1. Applied Mathematics (Pietermaritzburg, Westville)

Year 1	MATH130(16), 140(16)
Year 2	MATH212(16), 251(16), 235(16)
Year 3	Pietermaritzburg: MATH327(16), 356(16), 334(16), 16C from (MATH301(16), 310(16), 323(16), 331(16), 340(16), 342(16))
	Westville: MATH334(16), 356(16), 32C from (MATH301(16), 310(16), 327(16), 338(16), 340(16), 342(16), 344(16), 347(16))

2. Astronomy (Westville)

Year 1	MATH130(16), 140(16), PHYS110(16), 120(16)
Year 2	ASTR201(16), 202(16), MATH212(16), 251(16)
Year 3	ASTR301(16), ASTR302(16), ASTR303(16), 16C from (MATH327(16), MATH344(16))

3. Biochemistry (Pietermaritzburg, Westville)

Year 1	BIMI120(16), BIOL101(16), CHEM110(16), 120(16), MATH150(16), PHYS131(16)
Year 2	Pietermaritzburg: BIOC201(16), 212(16), CHEM220(16), RDNA202(16)
	Westville: BIOC201(16), 202(16), CHEM220(16), RDNA202(16)
Year 3	Pietermaritzburg: BIOC300(16), 311(16), 315(16), 316(16)
	Westville: BIOC307(16), 308(16), 315(16), 316(16)

4. Biology (Pietermaritzburg)

Year 1	BIOL101(16), 102(16), CHEM110(16), MATH150(16), STAT130(16)
Year 2	BIOL211(16), 213(16), 16C from (BIOL204(16), 205(16), 222(16))
Year 3	BIOL304(16), 305(16), 315(16), 324(16)

5. Cellular Biology (Westville)

Year 1	BIOL101(16), 102(16), CHEM110(16), MATH150(16), STAT130(16)
Year 2	(BIOC201(16) or BIOC203(16)), BIOL205(16), 234(16)
Year 3	BIOL316(16), 345(16), 350(16), (BIOL304(16) or 347(16))

6. Chemistry (Pietermaritzburg, Westville)

Year 1	Pietermaritzburg: CHEM110(16), 120(16), MATH130(16) or 150(16), MATH140(16) or 143(8), PHYS110(16) or 131(16), PHYS120(16) or 133(8)
	Westville: CHEM110(16), 120(16), MATH130(16) or 150(16), MATH140(16) or 145(16), PHYS110(16) or 131(16), PHYS120(16) or 132(16).
Year 2	CHEM210(16), 220(16), 230(16)
Year 3	CHEM310(16), 320(16), 330(16), 340(16)

7. Computer Science (Pietermaritzburg, Westville)

Year 1	COMP100(16), 102(16), 107(16), MATH130(16), 140(16)
Year 2	COMP200(16), 201(16), 16C from MATH at Level 2
Year 3	Pietermaritzburg: COMP304(16), 313(16), 314(16), 315(16)
	Westville: COMP314(16), 315(16), 32C from (COMP300(16), 301(16), 304(16), 306(16), 307(16), 313(16))

8. Ecology (Pietermaritzburg)

Year 1	BIOL101(16), 102(16), CHEM110(16), MATH150(16), STAT130(16)
Year 2	BIOL204(16), 223(16), (BIOL211(16) or 222(16))
Year 3	BIOL322(16), 323(16), 325(16), 16C from (BIOL304(16), BIOL305(16), BIOL390(16))

9. Economics (Pietermaritzburg, Westville)

Year 1	ECON101(16), 102(16), MATH130(16), 140(16)
Year 2	ECON201(16), 202(16)
Year 3	ECON314(16), 48C from ECON as specified by the School of Accounting Economics & Finance.

Notes:

- (i) *Economics can only be taken in conjunction with another primary major.*
- (ii) *Students majoring in Statistics cannot take ECON314, and must replace that module with ECON309.*

10. Genetics (Pietermaritzburg, Westville)

Year 1	BIMI120(16) or BIOL101(16), CHEM110(16), 120(16), MATH150(16), STAT130(16)
Year 2	GENE240(16), RDNA202(16), STAT222(16) or BIOL200(16)
Year 3	Pietermaritzburg: GENE310(16), 320(16), 330(16), 16C from (AGPS306(16), BIOL304(16), GENE350(16))
	Westville: GENE310(16), 320(16), 330(16), 16C from (BIOL304(16), GENE340(16))

11. Geography (Pietermaritzburg, Westville)

Year 1	CHEM110(16), ENV5120(16), GEOG110(16), MATH150(16), STAT130(16)
Year 2	ENV5210(16), 211(16), GEOG220(16)
Year 3	Westville: ENV5322(16); and at least 32C from ENV5314(16), 315(16), 316(16), 390(16) and at most 16C from (GEOG301(16), 330(16))
	Pietermaritzburg: ENV5322(16); and at least 32C from ENV5314(16), 315(16), 316(16), 319(16), 390(16) and at most 16C from GEOG301(16), 320(16), 330(16)

12. Hydrology (Pietermaritzburg)

Year 1	CHEM110(16), MATH150(16), PHYS110(16) or 131(16)
Year 2	HYDR210(16), HYDR220(16)
Year 3	HYDR310(16), AGPS301(16), HYDR322(8), HYDR330(8), HYDR324(16)

13. Mathematics (Pietermaritzburg, Westville)

Year 1	MATH130(16), 140(16)
Year 2	MATH212(16), 251(16)
Year 3	Pietermaritzburg: MATH310(16), 323(16), 340(16), (MATH342(16) or 334(16)) Westville: MATH310(16), 340(16), 32C from (MATH301(16), 327(16), 334(16), 338(16), 342(16), 344(16), 347(16), 356(16))

14. Microbiology (Pietermaritzburg, Westville)

Year 1	BIMI120(16), BIOL101(16), CHEM110(16), 120(16), MATH150(16), PHYS131(16)
Year 2	Pietermaritzburg: (BIOC201(16) or CHEM220(16)), MICR213(16), 214(8), 220(8), RDNA202(16) Westville: MICR213(16), 215(16), RDNA202(16)
Year 3	Pietermaritzburg: MICR304(16), 307(16), 320(16), 360(16) Westville: MICR304(16), 306(16), 307(16), 311(16)

15. Physics (Pietermaritzburg, Westville)

Year 1	MATH130(16), 140(16), PHYS110(16), 120(16)
Year 2	Pietermaritzburg: PHYS211(16), 212(16), 263(16) Westville: MATH212(16), 251(16), PHYS201(16), 204(16)
Year 3	Pietermaritzburg: PHYS361(16), 362(16), 365(16), 366(16) Westville: PHYS361(16), 362(16), 363(16), 364(16)

16. Plant Pathology (Pietermaritzburg)

Year 1	(BIMI120 or BIOL101(16)), CHEM110(16), 120(16), MATH150(16), PHYS131(16)
Year 2	PPTH214(16), RDNA202(16)
Year 3	PPTH305(16), 330(16), 360(16), 370(16)

17. Psychology (Pietermaritzburg)

Year 1	CHEM110(16), MATH150(16), PSYC101(16), 102(16)
Year 2	PSYC201(16), 16C from PSYC
Year 3	PSYC301(16), 48C from Level 3 PSYC

Notes:

- (i) Psychology can only be taken in conjunction with another primary major.
(ii) The above rules of combination refer only to Psychology taken as a major within the College.

18. Soil Science (Pietermaritzburg)

Year 1	CHEM110(16), 120(16), ENVS120(16), (MATH130(16) or 150(16)), (PHYS131(16) or 110(16))
Year 2	SSCI217(16), 230(16), 260(16)
Year 3	AGPS301(16), SSCI320(16), 353(16), 373(16)

19. Statistics (Pietermaritzburg, Westville)

Year 1	MATH130(16), 140(16), STAT130(16), 140(16)
Year 2	MATH212(16), 251(16), STAT230(16), 240(16)
Year 3	Pietermaritzburg: STAT301(16), 305(16), 350(16), 395(16)
	Westville: STAT301(16), 330(16), 350(16), 395(16)