

FACULTY OF SCIENCE LANGUAGE IMPLEMENTATION PLAN FOR THE 2022 ACADEMIC YEAR

DATE: SEPTEMBER 2021

1. Context

One of the principles of the Language Policy is that language should promote access and not be a barrier for students or staff to be successful whether it is the academic, professional or social environment. Within a diverse student community, language is critical for individuals to engage, participate and contribute intellectually in a social, economic, political and cultural environment. The Faculty of Science uses English and Afrikaans as languages of instruction and endeavours to promote multilingualism. In addition to lectures, practicals and tutorials are facilitated learning opportunities where students are exposed to an informal multi-language environment.

The Faculty recognises English as an international academic language and a medium through which science can be communicated. Seeing that many students that enter the undergraduate programmes of the Faculty are not adequately skilled or proficient in any of the two languages of instruction, the Faculty strives to ensure that all students are equipped to communicate on an intellectual level in English. We are, however, committed to managing our Afrikaans academic offering in order to sustain access to the Faculty for students who prefer to study in Afrikaans and to develop Afrikaans as a language of tuition where reasonably practical.

Consultation to obtain information

Heads of Departments, module and programme coordinators are requested to provide input via e-mail correspondence. The Director: Faculty Management is also consulted for input on the plan.

2. Aims of the Language Implementation Plan and promotion of multilingualism.

This implementation plan acknowledges the diverse range of backgrounds in terms of languages of staff and students and values this within the Faculty. The Faculty aims to create an environment where all students and staff feel comfortable, welcome and experience a sense of belonging. The plan also aims to promote inclusiveness and social cohesion to guard against marginalisation and exclusivity by creating an environment with access to knowledge and resources. This Language Implementation Plan will be practical and sustainable according to the financial resources and human capital of the Faculty.

3. Language use in Teaching and Learning

The following language options will be implemented:

Option I (refers to par. 7.1.3 in the Language Policy of the University): English and Afrikaans in separate class

groups (Parallel medium)

A class is divided into separate English and Afrikaans groups. Students indicate their preferred language of instruction at registration. Additional learning opportunities involving students from both language groups will be used to promote integration.

Option 2 (refers to par. 7.1.4 in the Language Policy of the University): English and Afrikaans in the same class

group.

During each lecture, all information is conveyed in at least English. Summaries and/or explanation of the core concepts will also be given in Afrikaans at the start or end of a lecture or when the core concept is introduced (These may be in the form of a verbal summary presented in Afrikaans by the lecturer or a PowerPoint summary in Afrikaans while the lecturer is speaking Afrikaans). Questions in Afrikaans and English will, at the least, be answered in the language of the posed question. Students will be supported in Afrikaans and English during a combination of appropriate facilitated learning opportunities.

Option 3 (refers to par. 7.1.5 in the Language Policy of the University): Single language (English or Afrikaans) only for a module (Single medium). Real-time interpreting will be provided in terms of option 3 a and

Option 3 a: English with real-time interpreting in Afrikaans; Option 3 b:

Afrikaans with real-time interpreting in English.

This option will only be used if:

b when it is feasible.

i. the lecturer(s) and the teaching assistants assigned to the module are not proficient in English or Afrikaans and therefore not able to answer questions asked in English or Afrikaans, or to give a summary or explanation of the key concepts in English or Afrikaans; or

ii. if all the students in the class group have been invited to vote by means of a secret ballot and those students who have voted, agree unanimously to the lectures being presented in either English or

Afrikaans only; and

iii. provided that the lecturer(s) and teaching assistants have the necessary English or Afrikaans proficiency, and agree to do so.

Options per year group

The Faculty is committed to give first-year students the opportunity of education in English or Afrikaans, depending on their preferred academic language. In most cases it is possible to have separate lecture groups based on language. However, facilities and timetable constraints make it impossible to offer separate tutorial or practical groups based on language. Therefore,

FIRST YEARS

lectures will be offered using **Option I** (refer to par. 7.1.3 in the Language Policy of the University): English and Afrikaans in separate class groups **(Parallel medium)** unless

- (i) the class size is too small for separate groups, in which case **Option 2** (refer to par. 7.1.4 in the Language Policy of the University): English and Afrikaans in the same class group will be used with real-time interpreting in Afrikaans;
- (ii) the nature of the module does not allow any of the options above, such as Earth Science Field Skills 172, which entails field work and where the lecturer can only speak English; and Computer Skills 171, which is mainly a computer-based online course offered to as many as 13 class groups; or
- (iii) it is a service module to students from another Faculty, in which case the module will then be offered according to the language plan of the Faculty in question.

In first-year tutorials and practicals, where one-on-one communication is used to a great extent, English or Afrikaans will be used, depending on the student's preferred academic language, as well as the lecturer's and teaching assistants' proficiency in Afrikaans and English. If there is a pedagogical need, real-time interpreting will be provided.

SECOND- AND THIRD-YEAR MODULES

The Faculty's preferred teaching mode for second- and third-year students involves to a larger extent independent learning and discussion groups, facilitated by lecturers, where students have the opportunity to participate in their preferred academic language (English and/or Afrikaans). Therefore, lectures will be offered using **Option 2** (refers to par. 7.1.4 in the Language Policy of the University): English and Afrikaans in the same class group, unless

(i) there is a pedagogical need to offer real-time interpreting;

- (ii) the conditions for Option 3 are met, in which case the lectures will be offered in **Option 3 a:**English only with real-time interpreting in Afrikaans if feasible; or
- (iii) Option 3 b: Afrikaans only with real-time interpreting in English.

In second-year and third-year tutorials and practicals, where one-on-one communication is used to a great extent, English or Afrikaans will be used, depending on the student's preferred academic language, as well as the lecturer(s) and teaching assistants' proficiency in Afrikaans and English.

POSTGRADUATE PROGRAMMES

A growing number of national and international students join the Faculty of Science on postgraduate level. Therefore, structured postgraduate modules are taught in English. The student does, however, have the choice to use Afrikaans for assessment purposes. Postgraduate students are, however, encouraged to present their research projects, thesis or dissertation in English because it must be submitted to an external examiner, who is usually an international expert and may not be able to assess the work if it is presented in Afrikaans. One-on-one communication is used to a great extent in the postgraduate academic offering. This will be mainly in English.

LANGUAGE OF TEACHING AND LEARNING MATERIALS

The teaching and learning materials will be made available as follows:

- (i) All compulsory reading material will be provided in English. Compulsory reading material (excluding published material) will also be provided in Afrikaans, unless it is not reasonably practical to do so.
- (ii) Module frameworks and study guides will be available in English and Afrikaans.
- (iii) Formative and summative assessments will be available in English and Afrikaans. Students may complete all assessments and submit all written work in English or Afrikaans.

4. Language in Administration

Communication will be conducted in both English and Afrikaans. This means that:

(i) Official communication with all students will be in both English and Afrikaans where reasonably practical (e.g. official correspondence from the Dean's office

- and departments, information on websites, the Faculty Calendar and promotional material);
- (ii) Correspondence with and from the Dean's Office and Faculty Committees will be in either English or Afrikaans, subject to the principle that all participants must have access to all the information.
- (iii) The official language of Faculty meetings, such as the Faculty Board meetings, inaugural lectures etc. will be English, with the provision of real-time interpreting in Afrikaans if requested.
- 5. Feedback mechanisms on implementation (good practice and complaints) Student feedback will be obtained by including specific questions regarding the implementation of, and their experience of the language offering as part of the student module feedback system. This feedback will be available to lecturers, Head of Departments and the Dean.

Lecturer feedback will be obtained by means of discussion of, and reflection on language of instruction. This feedback process will be led by the Head of the Department.

Concerns about language practice will be addressed in the following manner:

- (i) Students must report the matter to the Class Representative who will take it up with the lecturer(s) concerned.
- (ii) If a satisfactory outcome could not be reached, the matter should be escalated to the Module coordinator.
- (iii) An unsatisfactory outcome at this level (Module Coordinator) justify referral to the Head of the Department.
- (iv) If the matter cannot be resolved at any of these levels, it can be referred to the Dean's office.

The Head of the Department will:

- (i) report quarterly to the Dean regarding language matters that will be discussed at the Faculty Management Committee;
- (ii) report to the Dean about their best practices and challenges within the framework of their annual departmental strategic plans.

The Dean has to:

(iii) report in writing to the Vice-Rector: Learning and Teaching at the end of each semester on the Faculty's compliance with its Language Implementation Plan during the relevant semester.

6. Conclusion

The Faculty's Language Implementation Plan will be reviewed on an annual basis in conjunction with the Faculty's Strategic Plan. The implementation plan is communicated with all staff at the start of the academic year and they have to ensure that i) they adhere to it and ii) that the language option of the module is included in the Module Frameworks/Study guides. The Language Implementation Plan will be added as a fixed item to the Agenda of the Faculty Board meetings. Addendum A contains the Individual module language specifications.



Addendum A

Option I (refers to par. 7.1.3 in the Language Policy of the University): English and Afrikaans in separate class groups (Parallel medium)

Department	Module code	Module Name	year	NQF- level	Enrolment 2021	Language offering 2022	Credits 2022
Applied Mathematics	20710144	Applied mathematics 144	1	6	345	PARALLELMEDIUM	16
Applied Mathematics	20753124	Applied mathematics B 124	1	6	881	PARALLELMEDIUM	15
Applied Mathematics	20753154	Applied mathematics B 154	1	6	958	PARALLELMEDIUM	15
Applied Mathematics	20753224	Applied mathematics B 224	2	6	720	PARALLELMEDIUM	15
Applied Mathematics	36323262	Numerical methods 262	2	6	518	PARALLELMEDIUM	8
Applied Mathematics	56820114	Probability theory and stats 114	1	6	341	PARALLELMEDIUM	16
Botany And Zoology	25046124	Biology 124	1	6	966	PARALLELMEDIUM	16
Botany And Zoology	25046144	Biology 144	1	6	418	PARALLELMEDIUM	16
Botany And Zoology	25046146	Biology 146	1	6	55	PARALLELMEDIUM	16
Botany And Zoology	25046154	Biology 154	1	6	834	PARALLELMEDIUM	16
Chemistry And Polymer Science	11479124	Chemistry 124	1	6	1102	PARALLELMEDIUM	16
Chemistry And Polymer Science	11479144	Chemistry 144	1	6	1210	PARALLELMEDIUM	16

Department	Module code	Module Name	year	NQF- level	Enrolment 2021	Language offering 2022	Credits 2022
Chemistry And Polymer Science	11479176	Chemistry 176	1	6	121	PARALLELMEDIUM	32
Computer Science	50040176	Computer skills 176	1	6	122	PARALLELMEDIUM	8
Mathematics	21539114	Mathematics 114	1	6	680	PARALLELMEDIUM	16
Mathematics	21539144	Mathematics 144	1	6	696	PARALLELMEDIUM	16
Mathematics	21539186	Mathematics 186	1	6	74	PARALLELMEDIUM	32
Mathematics	21539214	Mathematics 214	2	6	398	PARALLELMEDIUM	16
Mathematics	21539244	Mathematics 244	2	6	400	PARALLELMEDIUM	16
Mathematics	21547124	Mathematics (bio) 124	1	6	777	PARALLELMEDIUM	16
Mathematics	21547176	Mathematics (bio) 176	1	6	47	PARALLELMEDIUM	32
Mathematics	38571115	Engineering mathematics 115	1	6	868	PARALLELMEDIUM	15
Mathematics	38571145	Engineering mathematics 145	1	6	900	PARALLELMEDIUM	15
Mathematics	38571214	Engineering mathematics 214	2	6	740	PARALLELMEDIUM	15
Mathematics	38571242	Engineering mathematics 242	2	6	620	PARALLELMEDIUM	8
Physics	12998176	Physics 176	1	6	122	PARALLELMEDIUM	32
Physics	13005134	Physics (bio) 134	1	6	760	PARALLELMEDIUM	16
Physics	13005154	Physics (bio) 154	1	6	648	PARALLELMEDIUM	16
Physics	59420113	Engineering Physics 113	1	6	852	PARALLELMEDIUM	8
Science Teaching	13623178	Science in context 178	1	6	926	PARALLELMEDIUM	12
Science Teaching	64007176	Univ prac in the natural scien 176	1	6	121	PARALLELMEDIUM	8

Option 2 (refers to par. 7.1.4 in the Language Policy of the University): English and Afrikaans in the same class group

Department	Module code	Module Name	year	NQF- level	Enrolment 2021	Language offering 2022	Credits 2022
Applied Mathematics	20753242	Applied mathematics B 242	2	6	201	DOUBLE MEDIUM	8
Applied Mathematics	20710214	Applied mathematics 214	2	6	140	DOUBLE MEDIUM	16
Applied Mathematics	20710314	Applied mathematics 314	3	7	96	DOUBLE MEDIUM	16
Applied Mathematics	20710354	Applied mathematics 354	3	7	74	DOUBLE MEDIUM	16
Applied Mathematics	20710364	Applied mathematics 364	3	7	97	DOUBLE MEDIUM	16
Biochemistry	11053214	Biochemistry 214	2	6	549	DOUBLE MEDIUM	16
Biochemistry	11053244	Biochemistry 244	2	6	527	DOUBLE MEDIUM	16
Biochemistry	11053315	Biochemistry 315	3	7	106	DOUBLE MEDIUM	16
Biochemistry	11053323	Biochemistry 323	3	7	100	DOUBLE MEDIUM	8
Biochemistry	11053345	Biochemistry 345	3	7	116	DOUBLE MEDIUM	16
Biochemistry	11053365	Biochemistry 365	3	7	104	DOUBLE MEDIUM	16
Chemistry And Polymer Science	52078324	Applied chemistry 324	3	7	11	DOUBLE MEDIUM	16
Chemistry And Polymer Science	65692112	Chemistry 112		1 5		DOUBLE MEDIUM	8
Chemistry And Polymer Science	11479264	Chemistry 264	2	6	189	DOUBLE MEDIUM	16
Chemistry And Polymer Science	11479324	Chemistry 324	3	7	28	DOUBLE MEDIUM	16
Chemistry And Polymer Science	48321152	Chemistry C 152	1	6	71	DOUBLE MEDIUM	6
Chemistry And Polymer Science	50563254	Textile science 254	2	6	9	DOUBLE MEDIUM	16
Chemistry And Polymer Science	52078315	Applied chemistry 315	3	7	5	DOUBLE MEDIUM	16
Chemistry And Polymer Science	52078344	Applied chemistry 344	3	7	12	DOUBLE MEDIUM	16
Chemistry And Polymer Science	52078345	Applied chemistry 345	3	7	5	DOUBLE MEDIUM	16
Computer Science	12263272	Scientific computing 272	2	6	217	DOUBLE MEDIUM	5
Computer Science	12263372	Scientific computing 372	3	7	208	DOUBLE MEDIUM	5
Computer Science	18139113	Computer Science 113	1	6	157	DOUBLE MEDIUM	16
Computer Science	18139114	Computer Science 114	1	6	356	DOUBLE MEDIUM	16

Department	Module code	Module Name	year	NQF- level	Enrolment 2021	Language offering 2022	Credits 2022
Computer Science	18139144	Computer Science 144	1	6	406	DOUBLE MEDIUM	16
Computer Science	18139214	Computer Science 214	2	6	159	DOUBLE MEDIUM	16
Computer Science	18139244	Computer Science 244	2	6	202	DOUBLE MEDIUM	16
Computer Science	18139314	Computer Science 314	3	7	107	DOUBLE MEDIUM	16
Computer Science	18139315	Computer Science 315	3	7	18	DOUBLE MEDIUM	16
Computer Science	18139334	Computer Science 334	3	7	160	DOUBLE MEDIUM	16
Computer Science	18139344	Computer Science 344	3	7	105	DOUBLE MEDIUM	16
Computer Science	18139345	Computer Science 345	3	7	29	DOUBLE MEDIUM	16
Computer Science	18139354	Computer Science 354	3	7	99	DOUBLE MEDIUM	16
Computer Science	50040171	Computer skills 171	1	6	364	DOUBLE MEDIUM	4
Computer Science	50040272	Computer skills 272	2	6	85	DOUBLE MEDIUM	5
Computer Science	50040372	Computer skills 372	3	7	47	DOUBLE MEDIUM	5
Computer Science	59536214	Computer science E 214	2	6	139	DOUBLE MEDIUM	15
Earth Sciences	64165154	Geo-Environmental Science 154	1	6	271	DOUBLE MEDIUM	16
Food Science	11053353	Biochemistry 353	3	7	56		
Mathematics	21539154	Mathematics 154	1	6	82	DOUBLE MEDIUM	16
Microbiology	16284214	Microbiology 214	2	6	280	DOUBLE MEDIUM	16
Microbiology	16284244	Microbiology 244	2	6	244	DOUBLE MEDIUM	16
Microbiology	16284314	Microbiology 314	3	7	105	DOUBLE MEDIUM	16
Microbiology	16284324	Microbiology 324	3	7	106	DOUBLE MEDIUM	16
Microbiology	16284354	Microbiology 354	3	7	108	DOUBLE MEDIUM	16
Microbiology	16284364	Microbiology 364	3	7	105	DOUBLE MEDIUM	16
Physics	12998114	Physics 114	1	6	243	DOUBLE MEDIUM	16
Physics	12998144	Physics 144	1	6	240	DOUBLE MEDIUM	16
Physics	12998224	Physics 224	2	6	42	DOUBLE MEDIUM	16
Physics	12998254	Physics 254	2	6	44	DOUBLE MEDIUM	16
Physics	12998314	Physics 314	3	7	14	DOUBLE MEDIUM	16
Physics	12998342	Physics 342	3	7	14	DOUBLE MEDIUM	8
Physics	12998344	Physics 344	3	7	11	DOUBLE MEDIUM	16
Physics	12998352	Physics 352	3	7	13	DOUBLE MEDIUM	8

Department	Module code	Module Name	year	NQF- level	Enrolment 2021	Language offering 2022	Credits 2022
Physics	12998384	Physics 384	3	7	7	DOUBLE MEDIUM	16
Physics	19267142	Special physics 142	1	6	114	DOUBLE MEDIUM	8
Physics	59420152	Engineering Physics 152	1	6	139	DOUBLE MEDIUM	6
Physiological Sciences	13080114	Physiology 114	1	6	65	DOUBLE MEDIUM	12
Physiological Sciences	13080144	Physiology 144	1	6	66	DOUBLE MEDIUM	12
Physiological Sciences	13080214	Physiology 214	2	6	222	DOUBLE MEDIUM	16
Physiological Sciences	13080244	Physiology 244	2	6	221	DOUBLE MEDIUM	16
Physiological Sciences	13080314	Physiology 314	3	7	229	DOUBLE MEDIUM	16
Physiological Sciences	13080334	Physiology 334	3	7	184	DOUBLE MEDIUM	16
Physiological Sciences	13080344	Physiology 344	3	7	188	DOUBLE MEDIUM	16
Physiological Sciences	13080364	Physiology 364	3	7	232	DOUBLE MEDIUM	16

Option 3 (refers to par. 7.1.5 in the Language Policy of the University): Single language (English or Afrikaans) only for a module (Single medium).

Department	Module code	Module Name	year	NQF- level	Enrolme nt 2021	Language offering 2022	Credits 2022
Applied Mathematics	20710244	Applied mathematics 244	2	6	165	SINGLE MEDIUM	16
Applied Mathematics	20753252	Applied mathematics B 252	2	6	98	SINGLE MEDIUM	8
Applied Mathematics	20710324	Applied mathematics 324	3	7	90	SINGLE MEDIUM	16
Botany And Zoology	53953212	Biodiversity and ecology 212	2	6	69	SINGLE MEDIUM	16
Botany And Zoology	53953214	Biodiversity and ecology 214	2	6	86	SINGLE MEDIUM	16
Botany And Zoology	53953224	Biodiversity and ecology 224	2	6	77	SINGLE MEDIUM	16
Botany And Zoology	53953244	Biodiversity and ecology 244	2	6	39	SINGLE MEDIUM	16
Botany And Zoology	53953254	Biodiversity and ecology 254	2	6	71	SINGLE MEDIUM	16
Botany And Zoology	53953264	Biodiversity and ecology 264	2	6	77	SINGLE MEDIUM	16
Botany And Zoology	53953315	Biodiversity and ecology 315	3	7	35	SINGLE MEDIUM	16
Botany And Zoology	53953324	Biodiversity and ecology 324	3	7	56	SINGLE MEDIUM	16
Botany And Zoology	53953334	Biodiversity and ecology 334	3	7	57	SINGLE MEDIUM	16
Botany And Zoology	53953344	Biodiversity and ecology 344	3	7	34	SINGLE MEDIUM	16
Botany And Zoology	53953345	Biodiversity and ecology 345	3	7	52	SINGLE MEDIUM	16
Botany And Zoology	53953354	Biodiversity and ecology 354	3	7	39	SINGLE MEDIUM	16
Botany And Zoology	53953364	Biodiversity and ecology 364	3	7	59	SINGLE MEDIUM	16
Centre For Bioinformatics And Computational Biology	12555322	Bioinformatics 322	3	7		SINGLE MEDIUM	16
Centre For Bioinformatics And Computational Biolog	12555312	Bioinformatics 312	3	7	107	SINGLE MEDIUM	8
Chemistry And Polymer Science	11479214	Chemistry 214	2	6	129	SINGLE MEDIUM	16
Chemistry And Polymer Science	11479234	Chemistry 234	2	6	85	SINGLE MEDIUM	16
Chemistry And Polymer Science	11479314	Chemistry 314	3	7	33	SINGLE MEDIUM	16
Chemistry And Polymer Science	11479344	Chemistry 344	3	7	31	SINGLE MEDIUM	16
Chemistry And Polymer Science	11479364	Chemistry 364	3	7	34	SINGLE MEDIUM	16

Department	Module code	Module Name	year	NQF- level	Enrolme nt 2021	Language offering 2022	Credits 2022
Chemistry And Polymer Science	48321224	Chemistry C 224	2	6	81	SINGLE MEDIUM	15
Chemistry And Polymer Science	48321254	Chemistry C 254	2	6	83	SINGLE MEDIUM	15
Chemistry And Polymer Science	11479254	Chemistry 254	2	6	50	SINGLE MEDIUM	16
Chemistry And Polymer Science	52078334	Applied chemistry 334	3	7	58	SINGLE MEDIUM	16
Earth Sciences	12239172	Earth science field skills 172	1	6	44	SINGLE MEDIUM	8
Earth Sciences	12239272	Earth science field skills 272	2	6	18	SINGLE MEDIUM	16
Earth Sciences	12239374	Earth science field skills 374	3	7	22	SINGLE MEDIUM	16
Earth Sciences	13374224	Geology 224	2	6	34	SINGLE MEDIUM	16
Earth Sciences	63991214	Environmental geochemistry 214	2	6	34	SINGLE MEDIUM	16
Earth Sciences	13374244	Geology 244	2	6	39	SINGLE MEDIUM	16
Earth Sciences	13374254	Geology 254	2	6	17	SINGLE MEDIUM	16
Earth Sciences	13374314	Geology 314	3	7	22	SINGLE MEDIUM	16
Earth Sciences	13374324	Geology 324	3	7	24	SINGLE MEDIUM	16
Earth Sciences	13374344	Geology 344	3	7	26	SINGLE MEDIUM	16
Earth Sciences	13374354	Geology 354	3	7	22	SINGLE MEDIUM	16
Earth Sciences	13374364	Geology 364	3	7	23	SINGLE MEDIUM	16
Earth Sciences	13622271	Environmental Field Skills 271	2	6	17	SINGLE MEDIUM	8
Earth Sciences	13622372	Environmental Field Skills 372	3	7	4	SINGLE MEDIUM	8
Earth Sciences	63991314	Environmental geochemistry 314	3	7	5	SINGLE MEDIUM	16
Mathematics	21539278	Mathematics 278	2	6	105	SINGLE MEDIUM	32
Mathematics	21539314	Mathematics 314	3	7	32	SINGLE MEDIUM	16
Mathematics	21539324	Mathematics 324	3	7	57	SINGLE MEDIUM	16
Mathematics	21539325	Mathematics 325	3	7	21	SINGLE MEDIUM	16
Mathematics	21539344	Mathematics 344	3	7	37	SINGLE MEDIUM	16
Mathematics	21539345	Mathematics 345	3	7	13	SINGLE MEDIUM	16
Mathematics	21539365	Mathematics 365	3	7	22	SINGLE MEDIUM	16
Mathematics	21539378	Mathematics 378	3	7	11	SINGLE MEDIUM	32
Mathematics	56847378	Financial mathematics 378	3	7	53	SINGLE MEDIUM	32
Mathematics	66176374	Biomathematics 374	3	7	9	SINGLE MEDIUM	16

	Department	Module code	Module Name	year	NQF- level	Enrolme nt 2021	Language offering 2022	Credits 2022
Physics		12998334	Physics 334	3	7	14	SINGLE MEDIUM	16