

Inspiring the imagination and seeking new heights

DE LA SALLE COLLEGE STUDENT HANDBOOK 2022

Learning Area / Subjec EARTH AND SPACE SCIENCE (ESS301)

Year Level: 13

Curriculum Level: 8

NCEA LEVEL THREE


Page 1	Del	Tue. 23 Nov 2021	
Science	ESS301 Asses	sment Statement 2022	Course is endorsable
Year:13	Course : Earth and Space Science	Mr A Kumar	Total Credits : 20
	(ESS) course at Level 3 is a LIE approved course which comes with 20 o	radits from internals and external assessments. Its a takes	

Earth and Space Science (ESS) course at Level 3 is a UE approved course which comes with 20 credits from internals and external assessments. Its a takes students through a journey of exploring the atmospherics processes to the Science of all that happens in the ocean. Students will learn how the socio- scientific issue of global warming and climate change has evolved over time. Students take a journey to explore an aspect of astronomy and develop skills to carry out a practical Earth and Science practical investigation. This course requires students to have strong literacy skills to be able to comprehend scientific texts and write detailed answers to questions.

A mi	nimum of 12	credits fi	rom any	NCEA I	Level Tw	vo Science subjects. Student Workbook \$28					
No	Standard Number	Version	Level	Credits	Lit / Num	Full Title	Method of Assessment	Assessment Opportunities Offered	Approximate Date	Grade	Teacher Signatur
1	91415	2	3	4	L1 Lit R Lit	Earth and Space Science 3.6 - Investigate an aspect of astronomy	Assignment		Week 2 Term 3		
2	91411	2	3	4	L1 Lit B Lit	Earth and Space Science 3.2 - Investigate a socio-scientific issue in an Earth and Space Science context	Assignment		Week 8 Term 1		
3	91410	2	3	4	Num L1 Lit B Lit	Earth and Space Science 3.1 - Carry out an independent practical Earth and Space Science investigation	Practical		Week 9 Term 3		
4	91413	2	3	4	L1 Lit B Lit	Earth and Space Science 3.4 - Demonstrate understanding of processes in the ocean system	Exam	External	Term 4		
5	91414	2	3	4	Ll Lit B Lit	Earth and Space Science 3.5 - Demonstrate understanding of processes in the atmosphere system	Exam	External	Term 4		

School Assessment Procedures - You can view your rights and obligations in the school's assessment procedures in the Student Assessment Handbook

Record your internal grades and ask your teacher to sign it off as correct. You can then use this as evidence of your achievement.

Subject: Earth and Space Science

NCEA Level: Three

Entry Requirements: a minimum of 12 credits from NCEA Level Two ESS or any core science subjects.

Number of credits gained: 20

Method of assessment:

- Both internal and external assessment
- Internal assessments are given after a series of mock practice runs
- Mock externals at the end of each unit of work
- Practical Test: Summative or Formative practical tests.
- Mid Year Examinations
- Preliminary Examinations

Looking Ahead:

- Tertiary level study
- A diverse range of careers stem from Earth and Space Science e.g. Teaching, Geo Scientist, Marine Scientist, Meteorologist, Atmospheric Scientist, Lab Technician, Geologist.

Course Description

Course aims:

This course is aimed at those students who have achieved well in Year 12 and who know that they wish to pursue a career that requires Earth and Space science. The course consists of Achievement Standards from the Level 3 Earth and space science course.

Course learning outcomes:

- Carry out research on a past geological event by selecting, processing and interpreting information and reporting.
- Describe the composition of the atmosphere and explain the processes which occur in the atmosphere system
- Be able to relate and link the atmospheric processes to the climate change.
- Show the understanding of the ocean system and explain all the processes which ocean is part of.
- Determine the role of ocean in the natural cycles eg water and carbon cycle.
- To be able to sort, summarise and report on reliable resources on a recent astronomical event or discovery

Achievement Standard	Curriculum Level	Level and Credit Value	Internal or External Assessment	Brief Description	My grades for Prelims	My final grades for Internals
91410 AS 3.1 Carry out an independent practical Earth and Space Science investigation	8	Level 3 4 credits	1	Students plan and carry out a practical investigation which a fair test or/and pattern seeking in ESS context		
91411 AS 3.2 Investigate a socio- scientific issue in Earth and Space context.	8	Level 3 4 credits	1	Students research on impact of climate change on food security on Earth.		
91413 AS 3.4 Demonstrate understanding of processes in the ocean system	8	Level 3 4 credits	E	This standard requires students to demonstrate the understanding of processes in ocean system		
91414 AS 3.5 Demonstrate understanding of processes in the atmosphere system	8	Level 3 4 credits	E	This standard requires students to demonstrate the understanding of processes in atmosphere system		
91415 AS 3.6 Investigate an aspect of astronomy	8	Level 3 4 credits	1	Student write a report on astronomical event/ discovery after investigating the evidences.		

HOW WILL I BE ASSESSED IN THIS SUBJECT?



De La Salle College Subject Year Planner 2022

Subject: ESS 301 Teacher in charge: Mr. Ajinesh Kumar Year Level: 13 Curriculum Levels: 8

Unit Title: AS91440 (AS3.1 ESS Internal) – Carry out an independent practical Earth and Space Science	Unit Title: AS91411 (AS3.2 ESS Internal) – Investigate a socio – scientific issue in the Earth and Space context	Unit Title: AS91413 (AS 3.4 ESS External) – Demonstrate understanding of processes in the ocean system
investigation	Achievement objectives:	Achievement objectives:
 Achievement objectives: Develop an in-depth understanding of the interrelationship between human activities and the geosphere, hydrosphere, atmosphere, and biosphere over time. 	 Use relevant information to develop a coherent understanding of socio-scientific issues that concern them, to identify possible responses at both personal and societal levels. Learning outcomes/skills: 	 Develop an in-depth understanding of the interrelationship between human activities and the geosphere, hydrosphere, atmosphere, and biosphere over time. Learning outcomes/skills:
 Learning outcomes/skills: Develop skills to carry out a practical investigation Demonstrate skills to collect, process, present and analyse data to reach a valid conclusion Use background knowledge to explain how the 	 Develop an understanding of how to carry out research and organise the information in a report. To be able to research and choose a topic that is scientific which has evidence To organise a computerised report. To organise a log book. 	 Describe the composition of the ocean Explain the process of ocean circulation Show the understanding of carbon cycling and the ocean's link Show the understanding of transport of matter and energy in the ocean and its effect
findings relate to selected context and its implications	Assessment tasks/method:	Assessment tasks/method: • Mid Year Mock Examinations (Term 2).
 Assessment tasks/method: Choosing a valid investigation to collect data to help answer the aim. 	 Choosing a valid investigation to collect data to help answer the aim. Prepare a written report 	 Preliminary Mock Examinations (Term 3). External NCEA examination at year's end.
Prepare a written report	Key competencies: Thinking, Managing self, Using language, symbols, and texts.	Key competencies: Thinking, Managing self, Using language, symbols, and texts, Participating and contributing.
Key competencies: Thinking, Managing self, Using language, symbols, and texts.	Values: Innovation, inquiry and curiosity, thinking, excellence	Values: Inquiry and curiosity, excellence.
Values: Innovation, inquiry and curiosity, thinking, excellence	Approximate time required: 5 weeks	Approximate time required: 8 weeks
Approximate time required: 6 weeks		

Unit Title: AS91414 (AS3.5 ESS External) – Demonstrate understanding of processes in the atmosphere system	Unit Title: AS91415 (AS3.6 ESS Internal) – Investigate an aspect of astronomy.	
 Achievement objectives: Develop an in-depth understanding of the interrelationship between human activities and the geosphere, hydrosphere, atmosphere, and biosphere over time. Learning outcomes/skills: Describe the composition of the atmosphere Explain the process of atmospheric circulation Explain the transport of matter and energy in the atmosphere Show the understanding water and carbon cycle in the atmosphere and its effect on climate change. 	 Achievement objectives: Explore recent astronomical events or discoveries, showing understanding of the concepts of distance and time. Learning outcomes/skills: To be able to sort, summarise and report on reliable resources on a recent astronomical event or discovery. Assessment tasks/method: Sorting and summarising relevant information on the chosen astronomical event or discovery. Showing progress of investigation in a log book Processing and interpreting the information and finally 	
 Assessment tasks/method: Mid Year Mock Examinations (Term 2). Preliminary Mock Examinations (Term 3). External NCEA examination at year's end. Key competencies: Thinking, Managing self, Using language, symbols, and texts, Participating and contributing. Values: Inquiry and curiosity, excellence, innovation. Approximate time required: 8 weeks	 Key competencies: Thinking, Managing self, Using language, symbols, and texts, Participating and contributing. Values: Inquiry and curiosity, excellence, innovation. Approximate time required: 6 weeks 	

Number	AS91410	Version	2	Page 1 of 3				
Achievement Standard								
Subject Re	eference	Earth and Sp	Earth and Space Science 3.1					
Title			Carry out an independent practical Earth and Space Science investigation					
Level	3	Credits	4 Assessme	nt Internal				
Subfield	Science							
Domain	Earth and	Space Science						
Status		Registered	Status date	04 December 2012				
Planned review date 31 De		31 December 2020	Date version published	17 November 2016				

This achievement standard involves carrying out an independent practical Earth and Space Science investigation.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Carry out an	Carry out an in-depth	Carry out a comprehensive
independent practical	independent practical	independent practical Earth
Earth and Space	Earth and Space Science	and Space Science
Science investigation.	investigation.	investigation.

Explanatory Notes

1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 8, and is related to the material in the *Teaching and Learning Guide for Earth and Space Science*, Ministry of Education, 2010 at http://seniorsecondary.tki.org.nz. The standard is aligned to the Nature of Science achievement objectives: Investigating in science, and Understanding about science.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the Papa Whakaako for the relevant learning area.

Procedures outlined in Safety and Science: A Guidance Manual for New Zealand Schools, Learning Media, Ministry of Education, 2000, are followed. Investigations must comply with the Animal Welfare Act 1999, as outlined in Caring for Animals: A Guide for Teachers, Early Childhood Educators, and Students, Learning Media, Ministry of Education, 1999.

2 Carry out an independent practical Earth and Space Science investigation involves:

Number	AS91410	Version	2	Page 2 of 3
• c 	nvestigation explaining how the	od that includes: for key variables les are measured nt of other varials otential sources nt of sampling bi ection of raw dat / data consistent cessing raw data bocessed data to o e Earth and Space investigation me	d of error as with the chos relevant to th draw a conclu e Science lin	
invo • c • i • i	lives: confirming or refini collected data by t - valid measuren - valid managem nterpreting the pro of the investigatior explaining in depth	ing the initial met he: nent of the key va- nent of other varia becessed data to o n how the Earth a n how the investig	thod to impro ariables ables draw a valid c and Space Sc	and Space Science investigation we the validity and reliability of conclusion related to the purpose sience links to the investigation d allowed for valid and reliable
inve • j	<i>stigation</i> involves: ustifying how the i data	nvestigation met	hod supports	Earth and Space Science the collection of valid and reliable elevant Earth and Space Science.

- 3 Independent investigation refers to a student initiated investigation.
- 4 Conditions of Assessment related to this achievement standard can be found at http://ncea.tki.org.nz/.

Replacement Information

This achievement standard replaced AS90727.

Number	AS91411	Version	2	Page 1 of 2
		Achieveme	nt Standard	
Subject R	eference	Earth and Sp	pace Science 3.2	
Title		Investigate a Science con	i socio-scientific issue in an text	Earth and Space
Level	3	Credits	4 Assessmen	t Internal
Subfield	Science			
Domain	Earth and	Space Science		
Status		Registered	Status date	04 December 2012
Planned review date 31 D		31 December 2020	Date version published	17 November 2016

This achievement standard involves investigating a socio-scientific issue in an Earth and Space Science context.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence	
 Investigate a socio- scientific issue in an Earth and Space Science context. 	 Investigate in depth a socio-scientific issue in an Earth and Space Science context. 	Investigate comprehensively a socio- scientific issue in an Earth and Space Science context.	

Explanatory Notes

1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 8, and is related to the material in the *Teaching and Learning Guide for Earth and Space Science*, Ministry of Education, 2010 at <u>http://seniorsecondary.tki.org.nz</u>. The standard is aligned to the Nature of Science strand.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the <u>Papa Whakaako</u> for the relevant learning area.

- 2 Investigate a socio-scientific issue involves:
 - selecting and processing a valid range of scientific information on the issue
 - · explaining the issue and the impact on individuals and society
 - · describing a personal response to the issue
 - · describing a societal response to the issue.

Investigate in depth a socio-scientific issue involves:

• explaining in detail the issue and the impact on individuals and society

Nun	nber	AS91411	Version	2	Page 2 of 2			
			nal response to th al response to the					
	• ev • jus	aluating the issu						
3			e refers to a curre pact on individual	nt issue in an Earth a s and society.	and Space Science			
4	An Earth and Space Science context means that the issue can be in Earth science, Space science, or a combination of both.							
5	<i>Investigate</i> involves collecting scientific information from a variety of sources and reporting on the investigation.							
6	A pers	sonal response v	vill be the learner'	s own point of view o	on the issue.			
7	A soci conse		ay represent fami	ly, whānau, or small	or large group			
8		tions of Assessn ncea.tki.org.nz/.	nent related to this	s achievement stand	ard can be found at			
		ent Information ement standard	replaced AS9072	8.				
Qual	lity Assu	rance						
1	asses		re they can regist	ations must have be er credits from asses	een granted consent to ssment against			
2	Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.							
	Conse	nt and Moderati	on Requirements	(CMR) reference	0233			

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Number	AS91413	Version	2	Page 1 of 2
		Achieveme	ent Standard	
Subject R	eference	Earth and S	pace Science 3.4	
Title		Demonstrate system	e understanding of processe	es in the ocean
Level	3	Credits	4 Assessmen	t External
Subfield	Science			
Domain	Earth and	Space Science		
Status		Registered	Status date	04 December 2012
Planned review date 31 De		31 December 2020	Date version published	17 November 2016

This achievement standard involves demonstrating understanding of processes in the ocean system.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
 Demonstrate understanding of processes in the ocean system. 	Demonstrate in-depth understanding of processes in the ocean system.	Demonstrate comprehensive understanding of processes in the ocean system.

Explanatory Notes

This standard was re-published in November 2013 following a minor editorial change.

1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 8, and is related to the material in the *Teaching and Learning Guide for Earth and Space Science*, Ministry of Education, 2010 at http://seniorsecondary.tki.org.nz. The standard is aligned to the Earth systems and Interacting systems achievement objective of the Planet Earth and Beyond strand.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the <u>Papa Whakaako</u> for the relevant learning area.

- 2 Demonstrate understanding involves:
 - explaining processes and links within the processes in the ocean system.

Demonstrate in-depth understanding involves:

· explaining links between the processes in the ocean system.

Nu	mber	AS91413	Version	2	Page 2 of 2
			nensive understa nplexity of the oc		
3	 oc oc ca tra 	ean composition ean circulation – rbon cycle – car nsport of matter	- surface and the	nperature, density, salinity, p rmohaline circulations, Cori y, physical pumps, biologica eat, tides, waves	olis effect
4				ievement standard can be f standards/qualifications/nce	

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference 0233

Number	AS91414	Version	2		Page 1 of 2
		Achievem	ent Stan	dard	
Subject Re	eference	Earth and S	Space Scie	ence 3.5	
Title		Demonstra system	Demonstrate understanding of processes in the atmosphere system		
Level	3	Credits	4	Assessment	External
Subfield	Science				
Domain	Earth and	Space Science			
Status		Registered	Status	date	04 December 2012
Planned review date 31 Dec		31 December 2020	Date v	ersion published	17 November 2016

This achievement standard involves demonstrating understanding of processes in the atmosphere system.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence	
 Demonstrate understanding of processes in the atmosphere system. 	Demonstrate in-depth understanding of processes in the atmosphere system.	Demonstrate comprehensive understanding of processes in the atmosphere system.	

Explanatory Notes

1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 8, and is related to the material in the *Teaching and Learning Guide for Earth and Space Science*, Ministry of Education, 2010 at http://seniorsecondary.tki.org.nz. The standard is aligned to the Earth systems and Interacting systems achievement objective of the Planet Earth and Beyond strand.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the <u>Papa Whakaako</u> for the relevant learning area.

- 2 Demonstrate understanding involves:
 - explaining processes and links within the processes in the atmosphere system.

Demonstrate in-depth understanding involves:

• explaining links between the processes in the atmosphere system.

Nu	mber	AS91414	Version	2	Page 2 of 2
			<i>hensive understa</i> nplexity of the at	<i>nding</i> involves: mosphere system.	
3	 at at - 	mosphere comp mperature, press mospheric circul convection cell	osition – gases, a sure, density ation s - Hadley, Ferre	vill be selected from: aerosols including clouds, g I, Polar Polar Easterlies, Doldrums	gradients,
	er • cy	uptions cles – water, ca	rbon; biological p	 water, gases, aerosols ump and physical pump temperature, precipitati 	
4		and the second		ievement standard can be standards/qualifications/no	

- Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference 0233

Number	AS91415	Version	2		Page 1 of 2
		Achievem	ent Star	ndard	
Subject R	eference	Earth and	Space Sci	ence 3.6	
Title		Investigate	an aspec	t of astronomy	
Level	3	Credits	4	Assessment	Internal
Subfield	Science				
Domain	Earth and	arth and Space Science			
Status		Registered	Status	date	04 December 2012
Planned re	eview date	31 December 2020	Date v	ersion published	17 November 2016

This achievement standard involves investigating an aspect of astronomy.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence	
 Investigate an aspect of astronomy. 	Investigate in depth an aspect of astronomy.	Investigate comprehensively an aspect of astronomy.	

Explanatory Notes

1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 8, and is related to the material in the *Teaching and Learning Guide for Earth and Space Science*, Ministry of Education, 2010 at http://seniorsecondary.tki.org.nz. The standard is aligned to the Planet Earth and Beyond strand, Astronomical Systems achievement objective.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the <u>Papa Whakaako</u> for the relevant learning area.

- 2 Investigate an aspect of astronomy involves:
 - selecting and processing a wide range of reliable information related to the astronomical aspect and the relevant science
 - explaining the astronomical aspect.

Investigate in depth an aspect of astronomy involves:

· explaining the key science relevant to the astronomical aspect.

Investigate comprehensively an aspect of astronomy involves:

• explaining the key links between the astronomy aspect and the key science.

Nu	mber	AS91415	Version	2	Page 2 of 2
3	An as	spect of astronon	y may include:		
		event	5 () () () () () () () () () (
	• a	discovery			
	• pr	inciples			
	• kr	nowledge gained	from space prob	es or telescope	S.
4	http://	/ncea.tki.org.nz/.	nent related to th	is achievement	standard can be found at
		ent Information			
Ihi	s achie	vement standard	replaced AS907	33.	
Qu	ality As	surance			
1	asses		re they can regis		ave been granted consent to assessment against

2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference 0233

2022 ESS 301 - Student Guide to Bibliographies / Referencing

A bibliography is the 'trail' of reading that you did to inform your thinking for your essay or assignment. A bibliography is organised alphabetically by the author's last name.

Setting up a bibliography APA style:

ltem	Reference list entries	In text citation
Book one author	Pilger, J. (2006). Freedom next time. London, England: Bantam.	(Pilger, 2006) or Pilger (2006).
Book two authors		
Book Alred, G. J., Brusaw, C. T., & Oliu, W. E. (2009). The business writer's handbook. New York, NY: St Martin's Press.		First citation: (Alred, Brusaw, & Oliu, 2009) Subsequent citations: (Alred et al., 2009)
Book six - seven authors	six - seven Walters R. P. (2005). Human relations development: A manual	
Website html no date	html from http://www.mang.canterbury.ac.pz/writing_guide	
Website PDF Radio New Zealand. (2008). Annual report 2007-2008. Retrieved from http://static.radionz.net.nz/assets/pdf_file /0010/1796761/Radio_NZ_Annual_Report_2008.pdf		(Radio New Zealand, 2008)
Video online Bellofolletti. (2009, April 8). Ghost caught on surveillance camera [Video file]. Retrieved from http://www.youtube.com /watch?v =Dq1ms2JhYBI&feature=related		(Bellofolleti, 2009)

De La Salle College Assessment Result Appeal Form

Name:	Class:
Name/number of standard being appealed:	
Subject:	Teacher who marked work:
Grade awarded for standard:	
Date work returned to student:	Date of appeal:
Reason for appeal:	
Student signature:	Caregiver's signature:

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Teacher response:

HOF response:

Principal's Nominee response:

Final decision:

De La Salle College

Absence From Internal Assessment

Application for Extension

Student:	Class:	
Subject:	Teacher:	
Assessment title:		
Standard number:	_	
Type of assessment activity (test, practical,	l, assignment etc).	
Date of assessment or due date:		
Reason for application:		
Illness or injury: <i>medical certificate</i>	e or a letter from parent / car	<i>egiver</i> must be attached.
Family / personal trauma: documen <i>or Dean).</i>	ntation must be attached <i>(eg</i>	. a letter from parent / caregiver, counsellor
School activity (sporting or cultural))	
Signature of the teacher-in-charge of the a	activity:	
Decision by Principal's Nominee:		
Extension granted, new due date:		
New assessment granted, new date	e:	
Compassionate consideration will b evidence used to determine the gra	•	e. HOD / TIC to attach documentation of
Application denied. Comment:		

The reason for this has been explained to me and I accept the decision.

Signed:	(Student)	(Teacher)
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