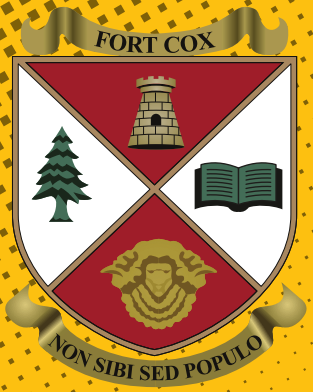

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

PROSPECTUS
2026

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FORT COX AGRICULTURE AND FORESTRY TRAINING INSTITUTE (FCAFTI)

VISION

"To be a leading institute of excellence for higher and vocational education and training in agriculture, agro-processing, forestry, and natural resources management"

MISSION

To meet the needs of our clients by imparting modern and fit for purpose education and training in the field of agriculture, agro-processing, forestry, and natural resources management.

OUR MOTTO

"NON-SIBI SED POPULO"
(Not for oneself, but for the people)

CONTACT DETAILS

Physical AddressFort Cox Farm
R63-Burnshill Turnoff
Middledrift
5685

Telephone +27 40 653 8033/4/5
Email info@fortcox.ac.za

Location: FCAFTI is Located in Middledrift (S 32º 46' 57'', E027º 01' 40'')

OFFICE OF THE PRINCIPAL

Principal & CEO Mr. M. Mankazana Tel.: +27 40 653 8033/4/5 Email: mkhululim@fortcox.ac.za	**Executive Secretary** Mrs. S. Kula Tel.: +27 40 653 8033/4/5 Email: skula@fortcox.ac.za
Deputy Principal & Head of Academics Mrs. M. S. Mogale Tel: +27 40 653 8033/4/5 Email: mmogale@fortcox.ac.za	**Acting Total Quality Assurance Manager** Mrs. N. G. Zaza-Lasini Tel: +27 40 653 8033/4/5 Email: nzaza-lasini@fortcox.ac.za

SECTION HEADS

Acting Chief Financial Officer Mr. A. Bovungana Tel: +27 40 653 8033/4/5 Email: abovungana@fortcox.ac.za	**Acting Corporate Services Manager** Mr. L. Mahlala Tel: +27 40 653 8033/4/5 Email: lmahlala@fortcox.ac.za
Acting Student Affairs Manager Mr M.V. Salman Tel: +27 40 653 8033/4/5 Email: msalman@fortcox.ac.za	**Farm Manager** Mr. B. Mrubata Tel: +27 40 653 8033/4/5 Email: bmrubata@fortcox.ac.za
HOD- Crop Production & Agricultural Engineering Dr Z Ntshangase Tel: +27 40 653 8033/4/5 Email: zntshangase@fortcox.ac.za	**HOD- Animal Production & Agri- Business** Dr. B. Moyo Tel: +27 40 653 8033/4/5 Email: bmoyo@fortcox.ac.za
Acting HOD – Forestry and Natural Resource Management Dr Z. Ntshangase Tel: +27 40 653 8033/4/5 Email: zntshangase@fortcox.ac.za	

FORT COX HISTORY

The Fort Cox Agriculture and Forestry Training Institute (FCAFTI) background

Fort Cox Agriculture and Forestry Training Institute was established in 1930. It is set amid beautiful surroundings of bush-clad hills and mountains and surrounded by villages with a diversified rural socio-economic set-up and biological heritage in the Amatole District Municipality, Eastern Cape. In addition, it owns vast crop and pasture lands and practices. It has proximity to Zanyokwe Irrigation Schemes, Amatole Forestry Company, Riverside Citrus Farms, and Large-scale dairy and piggery farms. It is a place of great historical, socio-cultural, and educational significance.

The scope of FCAFTI informed by the transformation agenda of the Department of Higher Education and Training includes:

- Provisioning of professional programmes in niche areas and skills development
- Focus on undergraduate teaching and learning in limited cognate fields or domains of study and offer both the "Soft" and "hard" skills.
- Offer a range of qualifications, with no less than 60% being on Higher Education Qualifications Sub-Framework(HEQSF) mainly leading to:
  - Higher Certificates (Occupational and vocational)
  - Advanced certificates
  - Diplomas
  - Advanced Diplomas
  - Bachelor's degrees
  - Short Skills programmes that are intended to support specific industry-related skills needs.

FCAFTI ACADEMIC PROGRAMMES

FORT COX INFORMATION		
Institution Name:	Fort Cox Agriculture and Forestry Training Institute	
Provider Type:	Public Institution	
Programme Name	Diploma in Agriculture (*specializing in*)	Agribusiness
		Animal Production
		Crop Production
	Diploma in Forestry	
	Diploma in Agricultural Engineering	
PROGRAMME INFORMATION		
Expected Time for Completion:	3 years full-time	
Number of Credits:	Minimum of 360	
Qualification Level	NQF 6	
Programme Name	Advanced Diploma (specializing in)	Forestry
		Horticulture
		Animal Production
Expected Time for Completion:	1-year full year	
Number of Credits:	Minimum of 120	
Qualification Level	NQF 7	

1. DEPARTMENT OF FORESTRY AND NATURAL RESOURCE MANAGEMENT

Name	Position	Qualifications	Specialization
Mr. A.E. Ramphinwa	Senior Lecturer	Master of Environmental Education, B. Environmental Management, PGDHET & Qualified Assessor	Environ. Management
Mr. S.S. Quvile	Senior Lecturer	B. Forestry, PGDHET & Qualified Assessor	Community Forestry
Ms. T. Mjali	Senior Lecturer	MSc Forestry, BSc Forestry & Qualified Assessor	Forestry/Forest Economics
Mr C. Sigcau	Senior Lecture	Masters in Forestry, B. Tech in Forestry & Diploma in Forestry	Forestry Engineering
Mr. A. Stemela	Technician	BSc Agric. Economics & Diploma in Forestry	Forestry

2. DEPARTMENT OF ANIMAL PRODUCTION AND AGRIBUSINESS

Name	Position	Qualifications	Specialization
Dr. B. Moyo	HOD	Ph.D. Pasture Science, MSc Animal Science Registered Assessor with AgriSETA, Qualified Moderator & PGDHET	Rangeland and Pasture Science
Mr. Thwane	Senior Lecturer	BSc Honours Animal Health, BSc Animal Health & Qualified Assessor	Animal Health
Ms. P.M. Nakalebe	Senior Lecturer	MSc Agric (Animal Science) Registered Assessor with Agri SETA & Qualified Moderator	Animal Science
Dr. M. Mangoale	Lab Technician	Ph.D. Botany, MSc Botany, Qualified Assessor & PGDHET	Botany
Mr. L. Balintulo	Technician	BSc Hons (Animal Science) B. Tech Agriculture Management, Qualified Assessor & PGDHET	Animal Production
Mr. S. Tafa	Senior Lecturer	MSc Agric Economics BSc. (Honours) Agric Economic) Cum laude, Qualified Assessor & PGDHET	Agric. Economics
Ms. N.G. Lasini	Senior Lecturer	MBA, B. Agric Economics, B Soc Science Honours (Development Studies), Qualified Assessor & PGDHET	Agribusiness
Mr C. Mtyelwa	Senior Lecturer	Masters in Agric Extension & Masters in Sustainable Agriculture	Agric Extension

DEPARTMENT OF CROP PRODUCTION AND AGRICULTURAL ENGINEERING

Name	Position	Qualifications	Specialization
Dr ZM Ntshangase	HOD	Ph.D. MSc Sustainable Agriculture, Registered, Moderator with AgriSETA &PGDHET	Sustainable Agriculture
Mr. B. Landzela	Senior Lecturer	MSc Agriculture: Crop Science, Honours: Horticulture & Qualified Assessor	Crop Production
Ms. L. Madikiza	Senior Lecturer	MSc Food Science and Nutrition, PGDHET & Qualified Assessor.	Crop Production
Dr. N. Lukashe	Senior Lecturer	PhD: Soil Science, MSc Agriculture: Soil Science & PGDHET	Soil Science
Mr. Hadebe T. S	Senior Lecturer	BSc. (Honours) Agricultural Engineering & PGCE.	Agric. Engineering
Ms. Z. Ndzumo	Lecturer	MSc. in Sustainable Agriculture, BTech in Water Eng. Post-graduate Dip. In Projects Management & National Diploma in Civil Engineering.	Civil Engineering
Ms. I. E. Manailana (Pr. Eng.)	Lecturer	BSc (Honours) Agricultural Engineering	Agricultural Engineering
Mr T. Nomvete	Technician	ND. Mechanical Engineering, Trade Test Mechanical Engineering & Certificate – Project Management.	Mechanical Engineering
Mr. T Phaku	Technician	B Tech in Agric. Management, Dip. Agric (Crop Production) Certificate in Basic Crop Protection (AVCASA)).Certificate in Health and Safety	Crop production

MONTH	WEEK	DAYS	DAY NO.	DATES	ACADEMIC	MANAGEMENT/ COUNCIL
JANUARY		THU	1	1	NEW YEAR'S DAY	
		FRI	2	2		
		SAT	**3**	**3**		
	2	**SUN**	**4**	**4**		
		MON	5	5	WIL Placement commences	
		TUE	6	6		
		WED	7	7		
		THU	8	8		
		FRI	9	9		
		SAT	**10**	**10**		
	3	**SUN**	**11**	**11**		
		MON	12	12		
		TUE	13	13	Student Bureau commences work–	
		WED	14	14		
		THU	15	15		
		FRI	16	16		
		SAT	**17**	**17**		
	4	**SUN**	**18**	**18**		
		MON	19	19	FIRST TERM BEGINS- FCAFTI STAFF COMMENCES DUTIES	
		TUES	20	20	Academic Meeting Issuing letters of appeal Final date for Admissions	
		WED	21	21	Capturing of 3rd years registrations	Academic Workshop
		THU	22	22	Publishing of Course allocations	Academic Workshop
		FRI	23	23	Submission of Exclusion Appeals WIL Placement Ends	
		SAT	**24**	**24**		
	5	**SUN**	**25**	**25**		
		MON	26	26	Registration of New Diploma students – 1st years	
		TUE	27	27	Orientation program Begins	
		WED	28	28		
		THU	29	29	Returning students registration starts Advanced Diploma Students registration begins	ECSA Committee
		FRI	30	30	Orientation program Ends	
FEBRUARY		**SAT**	**31**	**31**		
	6	**SUN**	**32**	**1**		
		MON	33	2	Academic programme commences 1st year field visits Second Year Training Library membership registration commences	
		TUE	34	3	SRC INDUCTION 1st year field visits	
		WED	35	4	1st year field visits Registration for all students close	

		THU	36	5	Late registration for all programmes commences	
		FRI	37	6	1st year field visits ends Second Year Training ends Library membership registration ends Late registration for all programmes closes	
		SAT	38	7		
	7	SUN	39	8		
		MON	40	9	Cancellations/ Module changes commence	
		TUE	41	10		
		WED	42	11	First year Field Practical Commences	
		THU	43	12	Second year of Field Practical Commences	
		FRI	44	13	Cancellations / Module changes ends	
		SAT	45	14	VALENTINE'S DAY	
	8	SUN	46	15		
		MON	47	16	Advanced Diploma Block Week Begins	
		TUE	48	17	Advisory Committee Meeting : Agricultural Engineering	
		WED	49	18		
		THU	50	19		ECSA Committee
		FRI	51	20	Advanced Diploma Block Week Ends	
		SAT	52	21		
	9	SUN	53	22		
		MON	54	23		
		TUE	55	24		
		WED	56	25		
		THU	57	26	Advisory Committee Meeting: Forestry and Natural Resource Management	
		FRI	58	27		
MARCH		SAT	59	28		
	10	SUN	60	1		
		MON	61	2		
		TUE	62	3	Exam time table published for comments	
		WED	63	4		
		THU	64	5		Graduation Committee1st Meeting
		FRI	65	6		
		SAT	66	7		
	11	SUN	67	8		
		MON	68	9		
		TUE	69	10		
		WED	70	11		
		THU	71	12	Institute Career Open Day	
		FRI	72	13	Final Exam timetable published	
		SAT	73	14		
	12	SUN	74	15		
		MON	75	16	Submission of Quarterly Reports with POE's by Managers Test 1 series commences	
		TUE	76	17	Test 1 series continues	

		WED	77	18	**Test 1 series continues**	
		THU	78	19	**Test 1 series continues**	**ECSA committee**
		FRI	79	20	**Test 1 series continues**	
		SAT	80	21	**HUMAN RIGHTS DAY**	
	13	SUN	81	22		
		MON	82	23	**Test 1 series continues** **Library week commences**	
		TUE	83	24	**Test 1 series continues**	
		WED	84	25	**Test 1 series continues**	
		THU	85	26	**Test 1 series continues**	**Graduation committee meeting**
		FRI	86	27	**Test 1 series ends** **FIRST TERM ENDS**	
		SAT	87	28		
	14	SUN	88	29		
		MON	89	30		**50% tuition and res fees paid**
		TUE	90	31		
APRIL		WED	91	1		
		THU	92	2		
		FRI	93	3	**GOOD FRIDAY**	
		SAT	94	4		
	15	SUN	95	5		
		MON	96	6	**FAMILY DAY**	
		TUE	97	7	**SECOND TERM Begins**	
		WED	98	8	**Academic Meeting**	
		THU	99	9		
		FRI	100	10		
		SAT	101	11		
	16	SUN	102	12		
		MON	103	13	**Submission of externally moderated papers commences** **Library Week begins**	**General Staff Meeting 14:00 hrs.**
		TUE	104	14		
		WED	105	15		
		THU	106	16		**Student Wellness Activity**
		FRI	107	17	**Submission of externally moderated papers ends** **Library week ends**	
		SAT	108	18		
	17	SUN	109	19		
		MON	110	20	**Submission of internally moderated papers commences** **Test 2 series commences**	
		TUE	111	21	**Test 2 series continue**	
		WED	112	22	**Test 2 series continue**	
		THU	113	23	**Test 2 series continue**	
		FRI	114	24	**Submission of internally moderated papers ends** **Test 2 series continues**	
		SAT	115	25		
	18	SUN	116	26		
		MON	117	27	**FREEDOM DAY**	
		TUE	118	28	**Test 2 series continues**	

		WED	119	29	Test 2 series continues	
MAY		THUR	120	30	Test 2 series continues	
		FRI	121	1	WORKERS DAY	
		SAT	122	2		
	19	SUN	123	3		
		MON	124	4	Test 2 series continues WIL evaluation commences Advanced Diploma Block Week Begins	
		TUE	125	5	Test 2 series ends	
		WED	126	6		National Nurses Day
		THU	127	7		
		FRI	128	8	Advanced Diploma Block Week Ends	Team Building
		SAT	129	9		
	20	SUN	130	10	MOTHERS DAY	
		MON	131	11		
		TUE	132	12	Advisory Committee Meeting: Animal Production	Corporate services Committee
		WED	133	13	Submission of Semester Marks	Academic Board meeting
		THU	134	14		Invigilation Training
		FRI	135	15	Publishing Semester Marks Graduation Ceremony	
		SAT	136	16		
	21	SUN	137	17		
		MON	138	18	Examination Study Week commences	Skills Development & Employment Equity Committee meeting
		TUE	139	19	Examination Study Week	Funding Raising Committee
		WED	140	20	Examination Study Week	Occupational Health and Service Committee meeting Finance Committee
		THU	141	21	Examination Study Week	ECSA Committee
		FRI	142	22	Examination Study Week ends	
		SAT	143	23		
	22	SUN	144	24		
		MON	145	25	Examination commences	Social and Wellness Committee meeting
		TUE	146	26		ARC committee
		WED	147	27		EXCO meeting
		THU	148	28		
		FRI	149	29		
		SAT	150	30		
JUNE	23	SUN	151	31		
		MON	152	1	Examination continues	50% Tuition and Res remaining balance
		TUE	153	2		
		WED	154	3		
		THU	155	4		
		FRI	156	5		
		SAT	157	6		
	24	SUN	158	7		
		MON	159	8	Examination continues	
		TUE	160	9		
		WED	161	10		

		THU	162	11		
		FRI	163	12	**Examination end**	
		SAT	164	13		
	25	SUN	165	14		
		MON	166	15	**Submission of Quarterly Reports with POE's by Managers**	
		TUE	167	16	**YOUTH DAY**	
		WED	168	17	**Supplementary Exam commences**	
		THU	169	18	**ECSA Internal Committee**	
		FRI	170	19	**Advisory curriculum meeting: Crop Production** **Supplementary Exam ends** **Submission of ECSA Report**	
		SAT	171	20		
	26	SUN	172	21	**FATHERS DAY**	
		MON	173	22	**Final submission of exam marks**	
		TUE	174	23	**Submission of Course allocations**	
		WED	175	24	**Board of Examiners**	
		THU	176	25	**Release of Results**	
		FRI	177	26	**Ruby Week starts** **SECOND TERM ENDS**	
		SAT	178	27		
	27	SUN	179	28		
		MON	180	29		
		TUE	181	30		
JULY		WED	182	1		
		THU	183	2		
		FRI	184	3		
		SAT	**185**	**4**	**Ruby Week ends**	
	28	**SUN**	**186**	**5**		
		MON	187	6	**Choir Festival Begins**	
		TUE	188	7		
		WED	189	8		
		THU	190	9		
		FRI	191	10	**Choir Festival Ends**	
		SAT	**192**	**11**		
	29	**SUN**	**193**	**12**		
		MON	194	13	**Volleyball Week Begins**	
		TUE	195	14		
		WED	196	15		
		THU	197	16		
		FRI	198	17	**Volleyball Week Ends**	
		SAT	**199**	**18**	**NELSON MANDELA DAY**	
	30	**SUN**	**200**	**19**		
		MON	201	20	**THIRD TERM Begins**	**General Staff Meeting 14:00 hrs.**
		TUE	202	21	**Registration of All students commences**	
		WED	203	22		
		THU	204	23		**ECSA Committee**
		FRI	205	24	**Registration of All students ends**	
		SAT	**206**	**25**		
	31	**SUN**	**207**	**26**		

		MON	208	27	All Academic Programmes commences Late registration Commences	
		TUE	209	28		
		WED	210	29		
		THU	211	30		
AUGUST		FRI	212	31	Late registration ends	
		SAT	**213**	**1**		
	32	**SUN**	**214**	**2**		
		MON	215	3	Entrepreneurship Projects Implementation begin	
		TUE	216	4	Academic Meeting	
		WED	217	5		Corporate services Committee
		THU	218	6		Social and Wellness Committee meeting Fund –raising committee
		FRI	219	7		
		SAT	**220**	**8**		
	33	**SUN**	**221**	**9**	NATIONAL WOMEN'S DAY	
		MON	222	10	NATIONAL WOMEN'S DAY	
		TUE	223	11		Finance committee
		WED	224	12		Occupational Health and Service Committee meeting Academic Board
		THU	225	13		
		FRI	226	14		Wellness Activity: Women's Day Celebration
		SAT	**227**	**15**		
	34	**SUN**	**228**	**16**		
		MON	229	17	Test Series 1 Commences Advanced Diploma Block Week Begins	
		TUE	230	18	Test Series 1 Continues	
		WED	231	19	Test Series 1 Continues	Skills Development & Employment Equity Committee meeting
		THU	232	20	Test Series 1 Continues	ECSA Committee
		FRI	233	21	Test Series 1 Continues Advanced Diploma Block Week Ends	
		SAT	**234**	**22**		
	35	**SUN**	**235**	**23**		
		MON	236	24	Test Series 1 Continues	
		TUE	237	25	Test Series 1 Continues	Audit & Risk Committee
		WED	238	26	Test Series 1 Continues	Executive Council
		THU	239	27	Test Series 1 Continues	
		FRI	240	28	Test Series 1 Ends Exam timetable published for comments	
		SAT	**241**	**29**		
	36	**SUN**	**242**	**30**		
SEPTEMBER		MON	243	31		
		TUE	244	1	Submission of External Moderated papers commences	
		WED	245	2		
		THU	246	3		First 50% tuition and res fees paid
		FRI	247	4		
		SAT	**248**	**5**		
	37	**SUN**	**249**	**6**		

		MON	250	7	Submission of External Moderated papers ends	
		TUE	251	8		International Literacy Day
		WED	252	9		
		THU	253	10		
		FRI	254	11		
		SAT	**255**	**12**		
	38	**SUN**	**256**	**13**		
		MON	257	14	Submission of Quarterly Reports with POE's by Managers	
		TUE	258	15		ECSA Committee
		WED	259	16		
		THU	260	17	Advisory Committee meeting: Agribusiness	Wellness Activity: Men's Celebrations
		FRI	261	18		
		SAT	**262**	**19**		
	39	**SUN**	**263**	**20**		
		MON	264	21		
		TUE	265	22		
		WED	**266**	**23**	THIRD TERM ENDS	
		THU	267	24	HERITAGE DAY	
		FRI	268	25		Heritage Day celebration
		SAT	**269**	**26**		
	40	**SUN**	**270**	**27**		
		MON	271	28	Mohair SA training commences MTO Forestry Training commences	
		TUE	272	29	Soccer Week Starts	
OCTOBER		WED	273	30	Arbor Day Event	
		THU	274	1		
		FRI	275	2	Mohair SA training ends MTO Forestry Training ends	
		SAT	**276**	**3**	Soccer Week Ends	
	41	**SUN**	**277**	**4**		
		MON	278	5	FOURTH TERM BEGINS	
		TUE	279	6		
		WED	280	7		
		THU	281	8		
		FRI	282	9		
		SAT	**283**	**10**		
	42	**SUN**	**284**	**11**		
		MON	285	12	Test 2 Series commences Advanced Diploma Block Week Begins	General Staff Meeting 14:00 hrs.
		TUE	286	13	Test 2 Series continues	
		WED	287	14	Test 2 Series continues	
		THU	288	15	Test 2 Series continues	
		FRI	289	16	Test 2 Series continues Advanced Diploma Block Week Ends	International World Food Day
		SAT	**290**	**17**		
	43	**SUN**	**291**	**18**		

		MON	292	19	Test 2 Series continues WIL Evaluation Commences	
		TUE	293	20	Test 2 Series continues Academic meeting	
		WED	294	21	Test 2 Series continues	
		THU	295	22	Test 2 Series continues	ECSA committee
		FRI	296	23	Test 2 Series Ends	
		SAT	**297**	**24**		
	44	**SUN**	**298**	**25**		
		MON	299	26		Invigilation training
		TUE	300	27	Sport Awards and Academic Awards	Academic Board
		WED	301	28	Final Exam timetable published	Corporate Services Committee
		THU	302	29		Fund-raising Committee
		FRI	303	30	SRC Elections Publishing Semester Marks	
NOVEMBER		**SAT**	**304**	**31**		
	45	**SUN**	**305**	**1**		
		MON	306	2	Entrepreneurship Project close up begin Examination Study week commences	
		TUE	307	3	Examination Study week	
		WED	308	4	Examination Study week	
		THU	309	5	Examination Study week	Social and Wellness Committee meeting
		FRI	310	6	Examination Study week ends Entrepreneurship Project close up ends	
		SAT	**311**	**7**		
	46	**SUN**	**312**	**8**		
		MON	314	9	Final Examination Commences	
		TUE	315	10		Occupational Health and Service Committee meeting
		WED	316	11		ECSA committee
		THU	317	12		
		FRI	318	13		
		SAT	**319**	**14**		
	47	**SUN**	**320**	**15**		
		MON	321	16	Examination continues	50% Tuition and Res balance paid
		TUE	322	17		Finance Committee
		WED	323	18		
		THU	324	19		Skills Development & Employment Equity Committee meeting ARC committee
		FRI	325	20		
		SAT	**326**	**21**		
	48	**SUN**	**327**	**22**		
		MON	328	23	Examination continues	
		TUE	329	24		
		WED	330	25		EXCO
		THU	331	26		
		FRI	332	27	Work Integrated Learning Ends	

					Final Examination Ends	
		SAT	**333**	**28**		
	49	**SUN**	**334**	**29**		
DECEMBER		MON	335	30	**WIL Presentation Week Begins**	
		TUE	336	1	**Submission of Quarterly Reports with POE's by Managers**	**ECSA Internal Committee**
		WED	337	2	**Supplementary examination commences**	
		THU	338	3		
		FRI	339	4	**Supplementary examination Ends** **WIL Presentations Week Ends**	
		SAT	340	5		
		SUN	341	6		
		MON	342	7	**Entrepreneurship Project Presentations**	
		TUE	343	8	**Entrepreneurship Project Presentations**	
		WED	344	9	**Board of Examiners**	
		THU	345	10	**Publication of Results**	**Long Service Awards**
		FRI	346	11		
		SAT	347	12		
	50	SUN	348	13		
		MON	349	14		**General Staff Meeting 14:00 hrs.**
		TUE	350	15	**FOURTH TERM ENDS**	
		WED	351	16		
		THU	352	17		
		FRI	353	18		
		SAT	354	19		
	51	SUN	355	20		
		MON	356	21		
		TUE	357	22		
		WED	358	23		
		THU	359	24		
		FRI	360	25	**CHRISTMAS DAY**	
		SAT	361	26	**DAY OF GOODWILL**	
	52	SUN	362	27		
		MON	363	28		
		TUE	364	29		
		WED	365	30		
		THU	366	31		
JANUARY		FRI	1	1	**NEW YEAR'S DAY**	
		SAT	2	2		
	1	SUN	3	3		
		MON	4	4	**Experiential training Placement commences**	
		TUE	5	5		
		WED	6	6		
		THU	7	7		
		FRI	8	8		
		SAT	9	9		
	2	SUN	10	10		
		MON	11	11	**Student Affairs commences work**	
		TUE	12	12		

		WED	13	13		
		THU	14	14		
		FRI	15	15		
		SAT	16	16		
	3	SUN	17	17		
		MON	18	18	**FIRST TERM BEGINS- FCAFTI STAFF COMMENCES DUTIES**	
		TUE	19	19	**Academic Meeting** **Issuing letters of appeals** **Final date for Admissions**	
		WED	20	20	**Capturing of 3rd years registrations**	**Academic Workshop**
		THU	21	21	**Publishing of Course allocations**	**Academic Workshop**
		FRI	22	22	**Submission of Exclusion Appeals** **Work integrated Learning Ends**	
		SAT	23	23		
		SUN	24	24		
		MON	25	25	**Registration of New Diploma – 1st years**	
		TUE	26	26	**Orientation program begins**	
		WED	27	27	**Orientation program**	
		THU	28	28	**Returning students registration starts** **Advanced Diploma Students registration begins**	
		FRI	29	29	**Orientation program Ends** **Advanced Research Project Presentations**	
		SAT	30	30		
			31	31		

ACADEMIC AND EXAMINATION RULES AND REGULATIONS

1. GENERAL INFORMATION

This booklet is divided into two sections namely:

Part 1: Academic rules and regulations

Part 2: Examination rules and regulations

Both academic staff and students are required to familiarize themselves with both sections. For more information, one may consult any of the following personnel: Head of Academics, Student Affairs Manager, Assistant Manager Student Bureau, Senior Examinations Officer, and Head of Departments. Several acronyms have been used throughout the document, and their list is provided herein under:

2. ACRONYMS

AC	Academic Rules & Regulations
ACC	Academic Council
BE	Board of Examiners
BOG	Board of Governors
D	Distinction
Dip Agric	Diploma in Agriculture
Dip For	Diploma in Forestry
Do	Dropped out
DNW	Did not write
F	Fail
FS	Failed sub minimum
FP	Failed Practical
GA	Graduate Attribute
Max	Maximum
Min	Minimum
M+4	Matric plus 4 years of post-matric education
NQF	National Qualifications Framework
NSM	No Semester Mark
NYM	No Year Mark
NSC	National Senior Certificate
NDP	Non-Diploma Purposes
P	Pass
SAQA	South African Qualifications Authority
SEO	Senior Examination Officer

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

ACADEMIC RULES & REGULATIONS

PART 1: ACADEMIC RULES & REGULATIONS

AC 1 Qualifications

The following qualifications are offered by the Institute

- Three-year Diploma in Agriculture: Agribusiness,
- Crop and Animal
- Three-year Diploma in Forestry:
- Three-year Diploma in Agricultural Engineering
- One-year Advanced Diploma: Forestry, Horticulture
- and Animal Production

AC 2 Student Admission Requirements

Diploma Programmes

Student Evaluation for Institute Admission Using the Swedish Rating System

(Under the Institute admission procedure, no person shall be admitted to a diploma programme unless he or she has obtained a Senior Certificate or National Senior Certificate with a minimum aggregate symbol E, passed at least two science subjects in matric and obtained the required minimum score of 40 percent in the Swedish Rating System. This system, outlined below, has three components as shown.)

Matriculation Results

Admission Criteria for the National Senior Certificate (NSC)

The certificate or statement of results clearly indicates whether the candidate meets the minimum requirements for admission to a Higher Certificate, Diploma, and bachelor's degree Programme.

For example, it states that "The candidate is awarded the National Senior Certificate and has met the minimum requirements for admission to a diploma or higher certificates as gazette for admission to higher education". Then the candidate qualifies to be admitted to the Institute, provided the combination of subjects and level of achievement meets the programme needs.

Admission Criteria for NSC

To be admitted for Diploma in Agriculture (Animal & Crop) and Diploma in Forestry, the candidate shall be required to pass at a prescribed level (in the language of learning as certified by Umalusi coupled with minimum rating of 3 (Moderate achievement 40% - 49%).

Admission Requirements: Diploma in Agricultural Engineering

The minimum entry requirement for students with National Senior Certificate or the National Certificate (Vocational) with appropriate subject combinations and levels of achievement. The prospective applicants must at least meet the following minimum requirements in terms of pass percentage.

The subject combinations required are as follows:

- English (Compulsory)
- Mathematics (L3) or Mathematical Literacy (L4) (Compulsory)
- Any two of the following
- Physical Science,
- Life Sciences/Biology
- Agricultural Science
- Geography

Admission requirements on Agribusiness
The subject combinations required are as follows:

- English (Compulsory)
- Mathematics (L3) or Mathematical Literacy (L4) (Compulsory)

Any one of the following:

- Physical Science,
- Life Sciences/Biology

Any two of the following:

- Accounting (L3)
- Business Management (L3)
- Economics L3
- Agric Management (L3)
- Information Technology (L3)

The preference will be given to those applicants with science subjects. For those applicants who may not have the preferred combination of subjects, but meet the minimum criteria the admission, the Committee will evaluate their applications individually.

National Senior Certificate (			National Certificate (Vocational)	
Subject	**% Pass**	**Level**	**Subject**	**% Pass**
Compulsory			**Compulsory**	
English	50	4	English 1st Add Language	50
Mathematics	50	4	Mathematics	50
Physical science	50	4	Life orientation	50
Any THREE			4 Vocational subjects for any of the Following NCV programmes	
Life sciences	50	4	Primary Agriculture	50
Agricultural Sciences	50	4	Electrical Engineering	50
Geography	50	4	Mechanical Engineering	50
Business Studies Subjects	50	4	Civil Engineering	50
Other	50	4		

Subject evaluation code -subject I

(a) With exemption - i.e., 4HG & 2SGsubjects	10
(b) With exemption - i.e., 4SG & 2HG subjects	6
(c) Senior certificate - 3HG & 3SG subjects	2

Category 1 (All these subjects carry a +4 rating)

1. Mathematics
2. Biology
3. Physical Science
4. Agricultural Science
5. Chemistry
6. Accounting
7. Economics
8. Computer Studies

Category II (All these subjects carry a +2 rating)

1. English
2. Geography
3. Practical Agriculture
4. Business Economics

Category III

(Any other subject, other than those listed in categories I and II, carries a zero rating) Scoring for subjects in categories I and II

Subject symbol	A	B	C	D	E	F	G
Score for higher grade	8	7	6	5	4	3	2
Score for standard grade	6	5	4	3	2	1	0

NOTE:

The total maximum points score possible for each subject is 12. (This is made up of the +4 rating for a Category 1 subject added to the +8 rating for an A symbol).

Foreign Qualification

Applicants are responsible for the evaluation of their qualifications by the South African Qualifications Authority (SAQA). Certified copies of qualifications and the relevant Certificate of Evaluation from SAQA must be submitted to the Institute's Admissions Committee.

NB: The above admission criteria will be subjected to the Institute internal evaluation procedures.

Post-matriculation experience

Experience	2
No. experience	0
Maximum points possible	2

Summary of maximum points possible from Sections 1, 2 and 3 above:

Matriculation result	10
Subject evaluation code (six subjects)	72
Post-matriculation experience	2
GRAND TOTAL	**84**

The minimum score of 40 percent for a student to be considered for admission to Fort Cox diploma is thus 34 points.

NOTE:

Only six relevant subjects should be evaluated, but if a student has done seven subjects, he/she will be evaluated at a total point of 96

Advanced Diploma Programmes

Advanced Diploma in Animal Production

A Diploma in Agriculture: Animal Production or an equivalent qualification at NQF level 6 with 60% aggregate OR two years of working experience in the relevant field.

Advanced Diploma in Horticulture

A Diploma in Agriculture: Crop/Plant Production or an equivalent qualification at NQF level 6 with 60% aggregate OR two years working experience in the relevant field.

Advanced Diploma in Forestry Management

A Diploma in Forestry or equivalent qualification at NQF level 6 with 60% aggregate OR two years' working experience in the relevant field.

DURATION

The Advanced Diploma in all above-mentioned programmes is a one-year, 120 credits, exit level 7 qualification.

AC 3 Registration for Instructional Offering

Registration for an instructional offering is subject to approval by the Head of Department on the recommendation of the Lecturer concerned.

AC 4 Registration for instructional offerings in advance

The Head of Academics may permit a student in consultation with the Head of Department to take instructional offerings normally presented for a semester in advance of that for which he/she is registered provided that:

Preference is given to instructional offerings presented for earlier semesters but not yet completed.
Credit has been obtained for prerequisites; and
There are no timetable clashes.

AC 5 Registration without attendance

A student who has TWO modules outstanding for completion of the curriculum of the qualification for which they are registered may register for that TWO module without attendance The student must have registered for the course in the previous examination cycle it was offered, qualified for examination admission, and attempted the examination but failed. For constant implementation of this rule, the following must be applied:

Submit an application in a designed "registration without attendance" application form.
The form must be approved by the relevant HOD and

Appointment and duties of Admission Committee

Unless the Council indicates otherwise the Admission Committee shall be composed of:

Student Affairs Manager - (Chairperson)
Assistant Manager: Student Bureau
Admission/Exams Officer
HOD/Lecturers
Assistant Manager: Student Welfare

Functions
Oversee all admission activities at the Institute.
Review applications received.
Discuss and finalize exceptional cases.
The committee should determine the number of students to be admitted.
Forward names to be considered for admission to Head of Academics.

submitted to Student Bureau for implementation.
It is the responsibility of the student to make time to contact the relevant lecturer.
For examination admission, ONLY a semester mark obtained in the previous exam cycle shall be applicable; and
This rule does not apply to modules that have a practical component or fieldwork modules.

AC 6 Combination of Instructional Programmes

No combination of instructional programmes is allowed unless it is prescribed as such in the curriculum.

AC 7 Prerequisites

A student shall not be admitted to an instructional offering unless he/she has completed all the prerequisites instructional offerings.

If a student fails but is granted a supplementary examination in any instructional offering which is a prerequisite for another instructional offering, he/she shall be deemed to have provisionally complied with such prerequisite, provided that this concession shall lapse if the said supplementary examination is failed.

As a special rule to Semester, I students, no credit shall be obtained for an instructional offering which requires a prerequisite or requisite instructional offering until credit is obtained for the prerequisite or requisite instructional offering.

AC 8 Courses attended for non-diploma purposes (NDP)

The Principal and CEO may permit a student registered for a diploma to register for an instructional offering or instructional offerings otherwise than as part of his/her curriculum, and additionally thereto, subject to such conditions as have been or may be described provided that:

Preference has been given to instructional offerings that form part of the student curriculum.
There are no timetable clashes.

AC 9 Determination of Semester Mark

A semester mark is determined by means of continuous assessment (during the course of an academic term or semester) of a student's performance in a module through various methods including tests, practical work, assignments among others.
A semester mark is not transferable and is valid only for the specific registration period in which it has been achieved.

Semester mark calculation

Assessment	Number	Percentage
Theory Test 1 Test 2	2 (10% weight each)	20%
Practical **Any two** -Assignment -Project -Practical -Tutorial	2 (15% weight each)	30%

The type of practical will depend on the nature of the course

AC 10 Examination

Examinations shall be held at the end of each semester for instructional offerings that are assessed through a summative evaluation.

An assessment of instructional offerings that are evaluated through continuous assessment shall be concluded at the end of the presentation of such instructional offering and may not be subject to examinations.

To be admitted to an examination for any instructional offering a student must have: Attended at least 80% lectures and undertaken all practicals of that instructional offering and fulfilled any other additional requirements as may be approved for that instructional offering. Obtained a minimum semester mark of 40% (calculated as 40% theory and 60% practical/projects/assignments) in any one instructional offering.

A student who attends an instructional offering without registration shall be deemed to have committed academic misconduct.

AC 10.1 Graduates attributes

Through accords like the **Washington Accord** (for engineer category, B Eng. or equivalent type qualifications at NQF level 8. Note that B Eng. Tech Honours / PG Dip in Engineering is not covered by this accord even though at NQF level 8, also M Eng. (structured) at NQF level 9 is also not covered, though this pathway might lead to registration as a candidate in the Engineer category.), **Sydney Accord** (for engineering technologists category, B Eng. Tech or Advanced Diploma or equivalent type qualifications at NQF level 7), and **Dublin Accord** (for engineering technicians category, Diploma in Engineering or equivalent at level 6). GAs ensure that graduates are not just technically capable, but also prepared to act professionally, ethically, and responsibly in diverse, real-world contexts.

Graduate Attributes in the Diploma in Engineering Qualifications

Diploma in Engineering, Graduate Attributes (referring to well defined engineering problem(s))
1: Problem solving Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.
2: Application of scientific and engineering knowledge Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialisation as specified to wide, practical procedures and practices.
3: Engineering Design Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs.
4: Investigations, experiments and data analysis Demonstrate competence to conduct investigations of well-defined problems; locate and search relevant codes and catalogues; and conduct standard tests and measurements.
5: Use of Engineering tools Demonstrate competence to apply appropriate techniques, resources and modern computing, engineering and IT tools to well-defined engineering problems, with an awareness of the limitations.
6: Professional and technical communication Demonstrate competence to communicate effectively and inclusively in well-defined engineering activities, both orally and in writing, with the engineering community and society at large, by being able to comprehend the work of others, document own work and give and receive clear instructions.
7: The engineer and the world Demonstrate critical awareness of the sustainable development impacts on society, the economy, sustainability, health and safety, legal frameworks and the environment.
8: Individual and collaborative teamwork Demonstrate competence to function effectively as an

individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
9: Independent Learning Ability Demonstrate competence to engage in independent learning through well-developed learning skills.
10: Engineering Professionalism Understand and commit to professional ethics and norms of technician practice, including compliance with relevant laws.
11: Project management and finance Demonstrate awareness of engineering management principles.
12: Workplace practices Demonstrate an understanding of workplace practices to solve engineering problems consistent with academic learning achieved.

Graduate Attributes Assessment Framework
The programme integrates **12 Graduate Attributes (GAs)**, which are assessed across various modules to ensure the development of well-rounded professional competencies. Each Graduate Attribute is addressed at one of the following levels:

- **Introduced (Basic Level)**
- **Further Developed (Intermediate Level)**
- **Exit Level (Advanced Level)**

Assessment Requirements
For modules that assess a Graduate Attribute at **Exit Level**, students must meet both of the following requirements to achieve a pass:

1. **Subject Knowledge:**
   Students must obtain a **minimum mark of 50%** for the subject knowledge component of the module.

2. **Associated Assessment Criteria (AAC):**
   Students must demonstrate **competence in all AAC** linked to the Graduate Attribute being assessed.

Important Note
A student may **pass the module overall** but **fail the Graduate Attribute** if competence in the AAC is not achieved. In such cases, the student will be required to **repeat the Graduate Attribute assessment** until competence is demonstrated.

AC 11 Passing an Instructional Offering

Unless approved by the Board of Examiners, a student's semester mark shall be combined in equal proportion with the examination mark, and the average will constitute the final mark in all Diploma examinations.

To pass an instructional offering, a student must obtain a minimum final mark of 50 percent.
A minimum pass mark of 40 percent must be obtained in the final examination.

AC 12 SUPPLEMENTARY EXAMINATION

A student may be admitted to a supplementary examination of an instructional offering which he/she has failed if S/he obtained a semester mark of at least 50 percent.

S/he had obtained a final mark of at least 45 percent and.
S/he has paid the prescribed examination fee.
To pass a supplementary examination a student must obtain a minimum of 50% and the score for the instructional offering shall be recorded as 50% for any such pass.

Any student who fails to present him/herself for a supplementary examination during the prescribed date irrespective of the reason will forfeit that supplementary and the instructional offering will be regarded as failed.

No further examination is permitted in instructional offerings which are evaluated by means of projects, fieldwork practicals, and workplace learnership. Students whose projects, reports, fieldwork, and workplace learnership tasks do not meet the required standard must repeat the instructional offering.

AC 13 SPECIAL EXAMINATIONS

A student who was prevented by illness from writing or completing one or more examination papers, may be permitted by the Principal and CEO to undertake a special examination, subject to the production of a satisfactory medical certificate stating the nature and duration of the illness and declaring that for health reasons it was impossible to write the examination on the specified day.

A student prevented by family circumstances, such as death or serious illness of an immediate family member during the examination, from writing one or more papers may be permitted by the Principal and CEO to undertake a special examination provided satisfactory evidence of such circumstances is produced.

i. An application should be submitted to the exam office within five working days after the student has missed the examination.

ii. No special examination shall be granted if a student:
   - Misreads/misinterprets the examination timetable.
   - Acts on unofficial information.
   - Arrives late for an examination.
   - Is unable to identify himself or herself satisfactorily at the examination venue.
   - Has completed an examination and afterwards applies for a special examination based on illness or other circumstances.
   - Failure to present oneself for an examination for any other reason than laid out in clauses (i) and (ii) above shall not be treated as the basis for awarding a special examination.

   Appropriate fees should be payable before a special examination can be written.
   Where a special examination is granted, it will only be written during the supplementary examination period.

(iii) Special exam for Student on WIL

A student will be allowed to take a special examination when he/she is left with one module to graduate. The student should not be carrying more than TWO courses and has a DP. This examination will be written during the normal examination.

(iv) Special exam for Advanced Diploma student

- Advanced Diploma students left with one module to graduate, qualify for a special examination. The student should have obtained a DP/Semester mark in the module in the last examination. This special examination will be written in February after Research Project results have been released.

AC 14 Auto Supp

i. A student who is registered for the final semester before Work Integrated Learning, who is prevented from qualifying for a diploma by only two instructional offerings, having qualified for and attempted an examination but does not qualify for the supplementary examination, may apply for an auto supp.

ii. A student who is registered for the final semester before Work Integrated Learning and qualifies for one supplementary examination but fails another instructional offering as outlined in AC16 (i), may apply for an auto supp in the failed instructional offerings.

iii. Applications for an auto-supp shall be submitted at least two weeks before the start of normal examination period and their approval shall be done by the relevant Head of Department.

iv. For the consistent implementation of this rule, the following definitions and sub-rules must be applied:

a) A student in the final semester before Work Integrated Learning refers to a registered student for the 4th semester in Agriculture and Forestry, 5th Semester Agriculture Engineering who has qualified to be categorized as such by virtue of his/her academic progress to date.

b) TWO instructional offering refers to TWO semester modules for which the student has been registered in the current academic year and is examined through examinations.

c)This rule shall not apply if a student has failed a supplementary or a special examination in that module. An auto supp shall not be granted on a supplementary, Aegrotat or a special examination.

v. If a student fails to write an auto supp as approved for whatever reason, the opportunity shall be forfeited.

vi. Advanced Diploma students qualify for an auto-supp if they are left with one course to graduate.

vii. Advanced Diploma students will write auto –supp in February after Research Project results are released

AC 15 RE-MARKING

i. A student who has failed an instructional offering may, upon submission of a written application to the Principal, and payment of the prescribed fee, be afforded an opportunity for a re-marking of his or her scripts for such instructional offering.

ii. The re-marking shall be done by the arbiter, who was not involved in the original marking of the scripts.

iii. The marks allocated by the arbiter shall be averaged with the original marks to constitute the final marks of the re-marking. Such final marks shall constitute the results of the re-marking, which supersede the result of the original marking.

iv. An application for re-marking shall only be considered if it is submitted before the beginning of the registration period of the subsequent semester.

v. A student who applies for re-marking shall not forfeit his right to a supplementary examination.

vi. The fee for the re-marking shall be refunded if the marking results in the award of a pass mark for that instructional offering originally failed.

vii. In the event of a dispute after the re-marking a student shall have access to the marks allocated by the examiners and the arbitrator, subject to payment of a prescribed access fee.

AC 16 SCRUTINISATION

i. A student who believes that an error has occurred in his or her instructional offering may apply to have his or her scripts scrutinized.

ii. The scrutiny does not involve the re-marking of the script but is limited to the checking of mark allocations and arithmetic errors.

iii. The prescribed fee for scrutiny must accompany the application. This fee will be refunded if a correction is made either to the disadvantage or to the advantage of the applicant because of the scrutiny.

iv. An application for scrutiny will only be considered if it is made prior to registration for the subsequent semester.

AC 17 CONDONATION

i. A semester mark and/or a final mark may be condoned at the discretion of the Department.

ii. The Department decision is informed by the class attendance record of the student as well as overall competence (knowledge, skills, and attitude) displayed by the student during the semester. The Department's decision to grant or not to grant condonation is final.

iii. The Institute reserves the right to a mark adjustment

AC 18 DETERMINATION OF YEAR OF STUDY

i. A student shall, at first attempt, be promoted to the second year of study if he/she has obtained 70% of the credits prescribed in the curriculum for the first year of study.

ii. A student shall not be allowed to register 10% more credits than the total credits prescribed for that semester.

iii. A student who has obtained less than 70% of the credits prescribed for the first year of study, and has repeated the first year, shall be promoted to the second year of study only if he/she obtains 90% of credits in his/her first-year courses.

iv. A student shall be promoted to the third year of study when he/she is left with TWO modules, with the DP.

AC 19 EXCLUSION ON ACADEMIC GROUNDS

i. At the conclusion of the first year, a student shall be excluded on academic grounds if he/she fails to obtain at least 40% of the total credits in his/her first year of study.

ii. If the student fails to pass an academic year within two consecutive years, he/she shall be excluded from academic grounds.

iii. A student who fails to complete a three-year diploma within a five-year period shall be excluded on academic grounds. Nevertheless, on application by an affected student to the Academic Board such ruling on special cases may be made without contravening AC21 (ii).

iv. A student who has been excluded on academic grounds may apply for re-admission after two years following the exclusion.

v. A student excluded on academic grounds must appeal to the Academic Board within 7 working days of receiving an exclusion letter

vi. The students returning from exclusion must apply for readmission to the Institute during the normal application period (July –September). The application should be accompanied by a motivational letter highlighting the student`s readiness to pursue their studies. Furthermore, the students will be subjected to a psychometric test to assess their readiness to pursue their studies. Upon admission a student must write a declaration statement affirming their commitment to their studies.

AC 20 OBTAINING A DIPLOMA

i. In order to obtain a diploma in any option, a student must be credited with the instructional offerings for the curriculum concerned.

ii. On completion of an instructional offering, a student shall be credited with the number of credits assigned thereto.

iii. A student who interrupts his/her studies for a period of three years and has not passed an instructional offering or instructional programme shall forfeit such credits as determined by the Board of Examiners.

AC 21 AWARDING OF A DIPLOMA

A student shall be awarded a diploma upon meeting all requirements for completing a qualification and approval is granted by the Academic Board.

AC 22 AWARDING OF DIPLOMA "WITH DISTINCTION"

A student shall be awarded the diploma with distinction if he or she obtains an average of at least 75 percent in all instructional offerings combined.

AC 23 CERTIFICATE OF ENDORSEMENT

i. A certificate of endorsement shall be made available in the event that one has lost his or her diploma certificate. In order for one to acquire the certificate of endorsement, the following are required:

ii. To complete an affidavit in the presence of a Commissioner of Oaths that shall be provided by the Examinations Office.

iii. To provide a certified copy of an ID document and a copy of the original diploma; and

iv. Pay the prescribed fee prior to submitting all the documents.

AC 24 VOCATIONAL TRAINING

i. Students shall undergo practical training for at least 8 hours per week under the guidance of an approved person in their first year of study.

ii. Students studying for a Diploma in Agriculture shall conduct projects as outlined in their curriculum under the guidance of lecturers in their second year of study.

iii. Students registered for the Diploma in Agricultural Engineering shall undertake a minimum of six months' workplace-based learnership after the 5th Semester under the guidance of an approved mentor.

iv. Student registered for the Diploma in Agriculture, and also a Diploma in Forestry shall undertake a minimum of 12 months' workplace-based learnership under the guidance of an approved mentor

AC 25 ARTICULATION AND CREDITS

i. A student who has obtained credits for similar or related instructional offerings in another institution may be granted credits for such instructional offering to complete their studies at the institute provided that:

ii. The instructional offering was registered with SAQA and accredited by the Education and Training Quality Assurance Body.

iii. An application to recognize such credits will follow this process:

- Complete course exemption form and submit to student affairs manager
- Admission committee sits to analyse and confirm the relevance of the curriculum for the course which credits must be exempted and recommend for the approval of exemption of credits by Deputy Principal and Head of Academics

AC 26 AMENDMENT OF ACADEMIC RULES

If the academic rules are amended, a year 2 or 3 student who elects to continue under the old rules shall be permitted to do so for a maximum period corresponding to the minimum duration of the instructional programme. If he/she fails to obtain any credit during any one year of this period or interrupts his/her studies at any time the student shall be obliged to continue under the new academic rules.

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

EXAMINATION RULES & REGULATION

PART 2: EXAMINATION RULES & REGULATIONS

The following examination rules and regulations are to be read in conjunction with the provisions of the academic rules and regulations in Part 1 of this booklet.

EC 1 EXAMINATION MARKS AND EVALUATION PROCEDURES

1.1. All written examinations should be marked over a minimum total of 100 marks.

1.2. Lecturers are expected to use action verbs that will assess the learner's knowledge, understanding, application, analysis, synthesis and ability to evaluate a given situation.

A list of possible action verbs used in examination is presented in the table below.

Revised Blooms Taxonomy Action Words					
Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Copy	Ask	Act	Advertise	Appraise	Adapt
Define	Associate	Administer	Analyse	Argue	Anticipate
Discover	Cite	Apply	Appraise	Assess	Assemble
Duplicate	Classify	Articulate	Breakdown	Compare	Choose
Enumerate	Contrast	Calculate	Calculate	Conclude	Collaborate
Examine	Convert	Change	Categorize	Convince	Collect
Identify	Demonstrate	Chart	Classify	Criticize	Combine
Label	Describe	Choose	Conclude	Critique	Compile
Listen	Differentiate	Collect	Contrast	Decide	Compose
Locate	Discover	Complete	Correlate	Defend	Construct
Match	Distinguish	Compute	Criticize	Discriminate	Create
Memorize	Estimate	Construct	Deduce	Distinguish	Design
Name	Explain	Demonstrate	Devise	Editorialize	Develop
Observe	Generalize	Determine	Diagram	Estimate	Devise
Omit	Give examples	Develop	Differentiate	Evaluate	Express
Quote	Group	Discover	Discriminate	Find errors	Facilitate
Read	Identify	Dramatize	Dissect	Grade	Formulate
Recall	Indicate	Employ	Distinguish	Justify	Generalize
Recite	Interpret	Establish	Divide	Measure	Hypotheses
Recognize	Judge	Examine	Estimate	Order	Imagine
Record	Paraphrase	Experiment	Evaluate	Persuade	Infer
Reproduce	Predict	Illustrate	Experiment	Predict	Integrate
Retell	Restate	Interpret	Explain	Rank	Intervene
Select	Review	Interview	Focus	Rate	Invent
State	Select	Judge	Illustrate	Recommend	Justify
Tabulate	Summarize	List	Infer	Score	Make
Tell	Trace	Manipulate	Order	Select	Manage
Visualize	Transform	Modify	Organize	Summarize	Modify
	Translate	Operate	Outline	Support	Organise
		Paint	Plan	Weigh	Originate
		Practice	Point out		Plan
		Predict	Prioritize		Prepare
		Prepare	Separate		Produce
		Produce	Subdivide		Reorganise
		Record	Survey		Revise
		Relate	Test		Rewrite
		Schedule			Schematize
		Sketch			Stimulate
		Solve			Solve
		Stimulate			Speculate
		Teach			Structure
		Transfer			Substitute
		Use			Support
		Write			Test
					Validate
					Write

1.3 Lecturers are expected to assess students in line with competence-based learning (CBL) principles and the promotions at which different levels of learning outcomes should be achieved as presented in the table below. Standard procedure to evaluate tests and examinations in line with CBL principles

CBL –LEARNING DOMAINS	TYPE OF QUESTIONS	1st yr	2nd yr	3rd yr	Average
Cognitive: mental skills (Knowledge) - K	Objective questions, memory, questions which require. recalling etc.	30	20	10	20
Psychomotor: manual or physical skills (Skills) – S	Explanatory and descriptive questions (general discussion)	60	40	40	47
Affective: growth in feelings or emotional areas (Attitude) – A	Application & problem solving	10	40	50	33
TOTAL		**100**	**100**	**100**	**100**

Application of Blooms Taxonomy is subject to the course content.

1.4 In delivering instructional offerings (facilitation) and in examining the learning level outcomes of the instructional offerings, lecturers are expected to pay sufficient consideration to horizontal (within level) and vertical (between) articulation of courses and their contents. The table below demonstrates the hypothetical articulation expected between courses within levels and between levels

Table 3: Articulation between courses based on competency Based Learning

Year	Semester	COURSES AND COURSE CONTENTS							
1	i								
	ii								
2	iii								
	iv								
3	v								
	vi								

The articulation between courses (horizontal) at the academic year level and across academic years (vertical) should be observed and practiced as part of the adopted competency-based learning (CBL) principles.

1.5 Grading marks in any instructional offering shall be as follows:

A: >75% (Distinction)
B: 70-74 (Pass)
C: 60-69 (Pass)
D: 50-59 (Pass)
E: 49% and below (Fail)

A comprehensive interpretation of the grades is presented below

Assessment Grades

A: (75% and above): Excellent work:
This grade is reserved for high quality work which shows evidence of deep understanding of the full range of ideas, principles and themes in question and independence of thought. There should normally be a good judgment of the situation, careful presentation and critical evaluation of the selected material, clear focus on the circumstances to which it refers, sensitivity to the constraints within and peculiarities of the relevant systems, to which it applies including (where appropriate) insight in relating theory and practice, and an effective and thorough synthesis of ideas clearly argued and leading to well-justified conclusions.

B: (70-74%): Very good work:
This grade is for work which shows evidence of a good understanding of the main themes, principles and ideas in question coupled with some insight and the expression of some independent ideas. There should normally be a logical and analytical discussion, a good synthesis of ideas set within an appropriate context, including (where appropriate) relating theory and practice, and leading to conclusions with some justification.

C: (60-69%): Competent work:
This grade is for work which shows evidence of appropriate study, presented clearly and adequately marshaled to illustrate the most significant of the main ideas, principles, and themes in question and to demonstrate a sound grasp of them. The work should be accurately reported, demonstrate some appreciation of context related to an application of the ideas to circumstances, including (where appropriate) an awareness of the relationship between theory and practice and an ability to draw upon practical experience, and present a coherent development supporting a conclusion.

D: (50-59%): Satisfactory work:
This grade is reserved for work which essentially approaches the criteria outlined as necessary for a C Grade but is lacking in some respects or contains flaws which, while noticeable, are not sufficiently serious to warrant the award of a failing grade.

E: (49% and below): Unsatisfactory:
This is a failing grade. It is for work which fails to meet or in significant ways does not approach the criteria described for a C or D Grade. This may be because there is not adequate evidence of sufficient study, or there are serious inaccuracies in presenting the material. It may be that there is evidence of not understanding a key main idea, principle or theme in question or lack of coherence in the organisation of the material and the work's structure resulting in the candidate's not making effective use of study and/or experience. Students who are awarded marks in this grade may be granted a supplementary examination as prescribed in Section B.7 of Academic Rules.

1.6 Academic performance rating scale

Scale	Performance	Remarks
5	Distinction: 75% and above.	•Outstanding
4	First Class Pass: 70-74%.	•Excellent
3	Second Class (Division 1) Pass: 60-69%.	•Highly competent /Very good
2	Second Class (Division 2) Pass: 50-59%.	•Competent
1	Fail: Below 50%	•Poor

EC 2 PERIOD OF EXAMINATIONS

Under normal circumstances:

2.1. All Institute examinations except supplementary shall be conducted during the months of May/June and October/November each year.

2.2. Supplementary examinations shall be conducted during the months of July and January each year.

2.3. All draft examination papers and memoranda shall be submitted to the Senior Examinations Officer for moderation, duplicating and safekeeping as guided by the Annual Academic Calendar:

First Semester

- Externally moderated papers: End of April
- Internally moderated papers: Mid-May

Second Semester

- Externally moderated papers: End of September
- Internally moderated papers: Mid-October

2.4. An examination timetable should be placed on all students' and staff notice board, and the learning management system, two weeks before the commencement of exams.

2.5. Examination results shall be made available to students within 15 working days after the examinations have ceased.

EC 3 APPOINTMENT, DUTIES AND RESPONSIBILITIES OF INTERNAL EXAMINERS

3.1. These are all members of the Institute teaching staff including part-time and temporary staff.

3.2. Duties and responsibilities

i. To set final and supplementary examination papers with their marking memoranda, in accordance with the prescribed syllabus.

ii. To preserve the secrecy of examination papers at all stages until the examinations have been written by the candidates.

iii. To mark final and supplementary examination answer scripts before they are moderated by the second internal/external examiner; and

iv. To supervise and evaluate students' projects and experiential learning in accordance with the prescribed syllabus.

v. To prepare the mark list in any instructional offering examined by him/her.

vi. To perform any other examination duties required by the Senior Examinations Officer.

EC 4 APPOINTMENT, DUTIES AND RESPONSIBILITIES OF INTERNAL AND EXTERNAL MODERATORS

4.1. Appointment of External Moderator (s) shall be based on the submission of the curriculum vitae with the following:

i. Educational qualifications, preferably NQF Level 7 or higher.

ii. Relevant knowledge and experience in the field of study for the paper to be examined.

iii. Current institution of affiliation.

4.2. External Examiners shall be appointed for a maximum period of three years' renewable at the end of each academic year.

4.3. An External Examiner shall be eligible for re-appointment but may not, except with the approval of the Academic Council (ACC), be appointed for more than three consecutive years, after which he/she will not be eligible for re-appointment until a further 3 years have elapsed.

4.4. Except in a case which in the opinion of the ACC represents an emergency, no person who is employed by the Institute shall be an External Examiner nor shall any person who previously taught in the Institute be an External Examiner of any student he/she taught and who is a candidate in the examination concerned.

4.5. The duties of an External Examiner in any examination, including a supplementary examination, shall be:

4.5.1. To moderate and certify draft examination papers, to ensure the maintenance of high academic standards and to recommend such alterations as he/she may deem fit.

4.5.2. To moderate the marking of examination scripts, student projects and experiential learning reports in the academic discipline(s) for which he/she is an Examiner.

4.5.3. To conduct or take part in practical and/or oral examinations as may be required by the relevant Head of Department (HOD).

4.5.4. To report to the Senior Examinations Officer of the institute on the following matters.

4.5.4.1. The standard of the examinations.

4.5.4.2. The standard of marking by the Internal Examiners.

4.5.4.3. The standard of projects, the depth and scope of the question paper in accordance with syllabus and general course outline and formulation of questions including technical accuracy; and allocation of marks and time for each question.

4.5.4.4. The student performance and

any other matters that call for comment. (Refer to Annexures I, II & III).

4.6. Appointment, duties, and responsibilities of Internal Moderators

The internal moderators will be appointed per semester during the departmental course allocation.

EC 5 APPOINTMENT AND DUTIES OF THE SENIOR EXAMINATIONS OFFICER (SEO)

5.1 Unless the ACC indicates otherwise the Senior Examinations Officer shall be the accounting officer for all the examination procedures.

5.2 In close collaboration with the Heads of Departments (HODs), the SEO shall generally be responsible for making arrangements for the examinations in all disciplines and in particular for the preparation and security of examination papers, marking, the release of final results and the archiving of all examination materials.

5.3 The SEO shall arrange for all marked scripts and mark sheets to be securely kept in the Institute. No marked scripts shall be destroyed within three years after the examination. Under normal circumstances no person or organisation outside the Institute, except an External Examiner or representative of Higher Education Quality Assurance Council (HEQAC) may have access to any marked scripts and/or mark sheets.

EC 6 APPOINTMENT AND DUTIES OF THE BOARD OF EXAMINERS

6.1. Unless the Academic Council indicates otherwise the Board of Examiners (BE) shall be composed of -

- 6.1.1 Deputy Principal& Head of Academic (Convener)
- 6.1.2 Total Quality Assurance Manager
- 6.1.3 Heads of Departments
- 6.1.4 Student Affairs Manager
- 6.1.5 Assistant Manager: Student Bureau
- 6.1.6 Senior Examinations Officer

6.2. Functions of the Board of Examiners

- 6.2.1 Oversee all examination activities at the institute.
- 6.2.2 Review examination results in all academic disciplines at the institute.
- 6.2.3 Recommend to the ACC the examination results for its consideration, ratification and formal approval.
- 6.2.4 Meet at the end of every semester, to discuss their observation recommendations relating to the conduct and standards of all examinations.
- 6.2.5 Discuss and finalize exceptional cases.
- 6.2.6 Forward names to be awarded diplomas.
- 6.2.7 Appoint and/or reappoint external and internal moderators.

EC 7 RULES FOR INVIGILATORS/CHIEF INVIGILATORS

7.1 Unless the SEO indicates otherwise in any examination room there shall be a minimum of one invigilator for every forty candidates excluding the Chief Invigilator.

7.2 The SEO shall inform all members of staff concerned of the days, times and venues of examinations immediately when the exam timetable is released.

7.3 All invigilators should be in the examination room at least 30 minutes before the published starting time of the examination.

7.4

(a) All invigilators must give their full attention to supervising and should not read, mark papers, smoke, or converse with examination candidates in the examination room.

(b) To always ensure proper supervision, all invigilators should immediately after commencement of the examinations, start collecting and counting attendance slips at the same time.

7.5. Cell phones are prohibited in the examination room.

7.6. No smoking is allowed in the examination room.

7.7. Students are prohibited from presenting themselves for any examination under the influence of intoxicating substances.

7.8. Invigilators may not leave the examination room without the permission of the Chief Invigilator.

7.9. Invigilators must always assist and cooperate with the Chief Invigilator in all matters.

7.10. When Invigilators hand out attendance slips and answer books to candidates, they must always ensure that:

(a) All candidates have student cards.

(b) Answer books are not handed out where answers are to be entered on question papers.

7.11 A candidate arriving late shall not be allowed an extension of time and shall not be admitted to the examination room if he/she is more than thirty minutes late.

7.12 Invigilators shall not permit any candidate to leave and return to the examination room during the examination except under - circumstances of urgency and under such supervision as is practicable.

7.13 Invigilators shall advise candidates of the time fifteen and five minutes before the end of the session.

7.14 At the end of the session candidates must be instructed to:

(a) Remain seated with the answer books on the desks until all books have been collected.

(b) Put the second and subsequent answer books inside the first book and indicate on the cover of the first book the number of books used.

7.15. No candidate may be allowed to take any examination book (used or unused) out of the examination room under any circumstances.

7.16. The Chief Invigilator must always ensure that the number of scripts corresponds with the number of candidates.

7.17. Where an invigilator has grounds to believe that a candidate is contravening the examination rules the invigilator must:

(a) Confiscate any incriminating material.

(b) Remove from the candidates the answer books used up to that point, noting on the cover: Confiscated at time.

(c) Issue the candidate with a fresh answer book.

(d) Immediately bring the matter to the attention of the Chief Invigilator or any other invigilator or any other person who is present in the examination room.

(e) The invigilator concerned and the Chief Invigilator must submit separate reports on the incident together with any confiscated material to the SEO as soon as possible after the examination.

At the end of the session the candidate must be instructed to submit a written report on the occurrence and the reason for his actions to the Deputy Principal (Registrar / Examination Officer).

7.18. Chief Invigilators

The Chief Invigilator is responsible for seeing that the instructions to candidates are strictly complied with. No candidate is allowed to leave the examination room intending to return to continue writing.

Chief Invigilators are requested to refer students to the regulations printed on the examination answer books and the rules for candidates writing examinations displayed on institute notice boards before the commencement of the examinations, which provide that:

- No candidate may leave the examination room during the first half-hour of the examination.
- No candidate may leave the examination room during the last half-hour of the examination.
- No candidate shall be admitted to the Examination Room after the expiry of thirty minutes from the published times of commencement of such examination

Candidates may have in their possession only answer books, question paper or material of any kind supplied to them by the invigilators. All other materials should be left outside or handed over to the invigilator before the commencement of the examination.

- No candidate is permitted to communicate in any way with other candidates.
- Candidates must not use odd pieces of paper (or blotting paper) for rough work.

- Candidates must check their question papers to make sure that they are completed.
- Candidates must provide all information asked for on the cover of the answer book.
- Under no circumstances may a candidate remove an answer book from the examination room.
- Students shall not use programmable calculators unless indicated otherwise by the chief invigilator.
- The instructions of the invigilators must be always obeyed in all matters.
- Smoking is not allowed in the examination room.
- If a candidate requires attention, they should raise his/her hand.
- At the close of the examination, candidates shall remain seated in their places until all answer books have been collected by the invigilators.
- Candidates must display their student cards throughout the session of examinations and failure to do so may lead to disqualification.
- Cell phones are not allowed in the examination room.

7.19. The Chief Invigilator must report to the Examinations Officer in writing as soon as possible if anything untoward in connection with the examination occurs either before, during or after the examination, e.g., invigilators absent, internal examiner or other departmental representative absent for the first fifteen minutes, candidates starting but ill during the examination, etc.

EC 8 IMPORTANT INFORMATION FOR EXAMINATIONS

8.1. All examinations will be held in the venues indicated on the examination timetable.

8.2. The first examiner or, in his absence, the second examiner must be present in the examination room 15 minutes before the commencement of the examination and remain for at least 15 minutes afterwards and must be available in their offices while any of their papers are being written in case of a query.

8.3. Students will be seated in specified rows to facilitate the distribution of examination papers. The examination will commence when all students have received their examination paper. Examiners must remain in the examination hall for at least first 15 minutes.

8.4. Examiners are not allowed to remove excess question papers and answer books from the hall until after the examination is over. Examiners are requested to return to the hall to collect the scripts no later than 10 minutes after the end of the examination.

8.5. All marks are entered in the appropriate space provided on the front covers of the examination's answer books (See example in Annexure IV).

i. Scripts for dispatch (to external examiners) should be handed to the SEO within four days after it has been written and must be accompanied by one question paper, memorandum and two copies of mark sheets duly completed by the internal examiner. A third copy of the Mark Sheet should be retained by the internal examiner.

ii. The two copies of the Mark Sheet will be sent to the external examiner, who will return the first copy with the scripts and retain the second copy for his own records. The first examiner then calculates the average of his and the external examiner's marks and hands the completed original to the Head of Department. The latter must then forward these to the Examinations Office as soon as possible.

8.6. Calculation of marks

i. For guidance in calculating and transferring marks examples are attached in Annexure IV Note that it is not necessary to enter symbols in the results column in the case of Fail (F), Pass (P) or Distinction (D). These are automatically generated from the marks by the computer. Symbols for supplementary (SE) and failed sub- minimum (FS) must be entered for processing. Examination offices will enter Aegrotat when authorized.

ii. The year mark, the exam mark and the final mark must be entered by the examiner. The year mark must be a whole number.

iii. The fraction of marks in all questions should be carried forward until the calculation of the final percentage where the nearest whole mark should be recorded (see example in Annexure IV).

Completing Results Sheets

To ensure that the results are punched correctly from the Results Sheets please make sure that your results are as follows:
The final examination mark (i.e. the average of the semester mark and the examination mark) must be entered under the column "Final Mark".
In the calculation of the results make sure that the rule in No. 8.7 below is followed.

i. As soon as each Department completes the Results Sheets

ii. The original of the Result Sheet in an electronic format must be sent to the SEO, together with the original copy of the Mark Sheet for everywhere applicable.

iii. Scripts must be arranged according to the order on the Results' Sheets, tied together neatly, with the course and paper clearly indicated. Where external examiners are involved, the name and address of the external examiner must also be clearly indicated.

iv. Scripts and Results' Sheets will be checked for accuracy. It is therefore essential that the original copies of the result sheets be sent to the Examination Office.

8.8. If a student was excluded from an examination because he /she did not obtain a semester mark of 40%, this fact will be entered on the Results Sheets as NSM. A student who has dropped out without final cancellation is given DO. The names of any other absentees will be indicated by inserting DNW.

A student who has failed to complete practicals or who did not obtain an average of 40% in practicals will be given FP.

8.9. Under no circumstances should marks be disclosed to students. The chief examination officer will be responsible for the publication of results and will advise every student of their results. Lecturers should under no circumstances give any information on examination results to students.

8.10.

i. Scripts should be marked and submitted to the SEO as soon as possible. Under no circumstances should they be retained for marking purposes as explained herein under:
ii. Scripts and memoranda are handed to individual lecturers / senior lecturers immediately after examination for marking
iii. The marked scripts have to be sent to an external examiner 4 days after they have been written.
iv. The external examiner must return the moderated scripts within five working days.
v. Any changes suggested and recommended by the external examiner must be affected before finalization of results.

8.11. After the marks have been entered into the computer, a computer printout will be sent back to the Head of Department to countercheck against his original copy of results.
Any queries must be reported to the SEO within one working day of receipt.
This is to clarify miscalculations, errors, etc. before the Examination Board sits and to stop last-minute appeals in July and January over eligibility for supplementary, etc.

8.12. Examiners (both internal and external) invigilators, and all concerned must strictly adhere to these examination rules and regulations for the smooth running of the institute examinations.

EC 9 EXAMINATION PROCEDURES

- Candidates are required to be seated 20 minutes before the commencement of Examination.
- The Chief Invigilator reads examination rules that have a direct bearing to the conduct of examinations inside the examination room.
- Candidates are issued with pink slips to confirm their presence in the examination room.
- By signing the pink slips candidates acknowledge an understanding of the rules.
- Security Arrangements
- All examination papers sent outside the Institute for moderation are both dispatched and received through the SEO.
- After corrections (if any) have been undertaken, the scripts should be printed and stored.

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

DIPLOMA PROGRAMMES

FORESTRY PROGRAMME

GENERAL INFORMATION ABOUT FORESTRY QUALIFICATION OFFERED:

Fort Cox Agriculture and Forestry Training Institute offers two three-year National Diploma Programmes, namely Diploma in Agriculture and Diploma in Forestry. These Programmes are fully accredited by The Council on Higher Education (CHE) through its Higher Education Quality Assurance Committee (HEQC). The full re-accreditationstatus was confirmed in 2012.

Students who attain any of these Programmes get credits towards a B-Tech or B. Agric Programme. In addition, Fort Cox Agriculture Diploma Programme is recognized by the University of Fort Hare in terms of awarding credits in similar courses completed at the Institute subject to certain conditions.

1. MISSION

To continue offering well-recognized Forestry education and training that would meaningfully contribute to the development and/or growth of the industry locally and internationally.

2. EXIT LEVEL OUTCOMES

Understanding the principles of Silviculture, Horticulture & Agriculture (SHA) & the use of trees & forests in a range of environmentally sustainable land use systems (120 credits).	Understand and convey the roles of trees and forests in a variety of land use systems.	• Define and describe sustainable land use systems and forests within them. • Demonstrate working knowledge of Plant Physiology, Taxonomy, Silviculture, Horticultural and Agricultural Practice.
	Understand the basic principles of natural resource ecology, conservation and sustainability for the development of forestry.	• Identify and explain the basic ecological principles of SHA and biotic and abiotic factors influencing SHA. • Demonstrate knowledge of the concepts of conservation and sustainability.
	Have an understanding of indigenous methods and approaches to the utilization of natural resources associated with developmentforestry.	• Categorization of traditional uses of forest species of importance to development of forestry activities. • Selection and application of traditional knowledge in development forestry activities.
	Understand basic information collection, administration, management skills and development economics.	• Display observational competency in fieldwork, data information collection. • Demonstrate the ability to effectively communicate development forestry information to specific audiences.
Design, apply and implement the practices of development forestry in sustainable, socio-economic local, regional, and national development (120 credits)	Demonstration of an understanding of development theory, land use planning and forest policy legislation.	• Describe the role of land use planning as a bridge between the principles and practices of development forestry management. • Demonstrate a knowledge of national legislation related to development forestry management. • Successfully apply development theory in a South African forestry context.
	Understand and apply harvesting systems and value- added processes in relation to timber and non-timber forest products that can be generated by communities for sustainable development.	• Identify and categorize a variety of harvesting systems and value-added processes. • Provide evidence of practical experience of community / development forestry interactions.

	Design and implement participatory, tree-oriented Development for extension services.	• Demonstrate theoretical and practical competency with a range of PRA tools and techniques. • Design an extension tool to obtain specific information.
	Collect and use forest and tree related information of relevance to sustainable development.	• Demonstrate the ability to utilize and apply collected information in a variety of development forestry situations. • Display appropriate knowledge and understanding of communication aspects critical to development forestry activities.
Evaluation, compares, advise, and integrate appropriate development forestry management strategies in order to promote sustainable land use practices & improve rural livelihoods (120 credits	Recognition and application of value systems within social, cultural, and economic diversity.	• Critically analyze the interaction between different social, gender, economic and cultural groups. • Demonstrate awareness and understanding of personality traits, attitudes, and • Skills necessary for successful interactions within development forestry.
	Design a development forestry management plan and implement the management of development forestry-related activities.	• Drafting of appropriately designed plans incorporating interventions aimed at obtaining realistic outcomes. • Utilize multi-resource inventories, appropriate technology, and indigenous knowledge. • Analyze and evaluate different management options for sustainability.
	Synthesize the influence of policy and legislation on various forms of land tenure and be able to advise on optimum ways to utilize this knowledge.	• Demonstrate critical knowledge of sustainable forest management as set out in the National Forestry Act. • Assemble and convey knowledge of policy and legislation of the tree and forest elements in the South African environment.
	Advise on the development of small – scale forestry and income-generating enterprises.	• Draw up a project proposal based on a case study or real-life situation including present status, available resources, stakeholders, budgets, etc., to achieve sustainability. • Compare and evaluate holistic approaches integrating acquired skills and attitudes in the form of case study analyses.

3. CRITICAL OUTCOMES EMBEDDED ON THE SPECIFIC OUTCOMES

a. Identify and solve problems with critical and innovative thought.
b. Effectively partake as a member of a team or group.
c. Effectively apply science and technology while demonstrating responsibility towards the environmentand health of others.
d. Communicate effectively.
e. Develop opportunities as an entrepreneur.

Course		Credits	Pre- requisite	Credits
1	Forest Botany	FB111		10
2	Basic Scientific Concepts	AF112		8
3	Applied Mathematics	AF113		8
4	Communication	AF111		8
5	Forest Economics 1	FS111		10
6	Computer Application	AF114		8
7	Forestry Practical 1	FC111		8
Total Semester 1 Credits (Year 1)				60
Courses		**CourseCode**	**Pre- requisite**	**Credits**
8	Silviculture I (Nursery practice)	SV121		10
9	Forestry Information Systems	FI121	AF114	10
10	Introduction to Soil Science	SS121		8
11	Forestry Engineering 1	FE121		8
12	Forest Management I	FM121		8
13	Forestry Practical 2	FC121		8
14	Environmental Law	EL121		8
Total Semester 2 Credits (Year 1)				60
Total Year 1 Credits				120
Courses		**Coursecode**	**Pre- requisite**	**Credits**
15	Silviculture 2	SV211	SV121	10
16	Community Forestry	CF211		8
17	Forestry Engineering 2 (Timber Harvesting and Work Science)	FE211	FE121	10
18	Forest Mensuration and Inventory	MI211	FI121	10
19	Forest Management 2	FM211	FM121	10
20	Forest Protection (pest and diseases)	FP211		8
21	Environmental Management	EM211		10
Total Semester 3 Credits (Year 2)				66

Courses		Coursecode	Pre- requisite	Credits
Forestry Engineering 3 (Forest roads and logistics)		FE221	FE211	10
23	Human Resource Management	HR221		8
24	Nature Conservation	NC221		10
25	Fire Protection	FP222		10
26	Forest Economics 2	FS221	FS111	10
27	Integrated Natural Resource Management	NR221		10
28	Forest Product Processing	FP221		8
Total Semester 4 Credits (Year 2)				66
Total Year 2 Credits				132
Courses		**Coursecode**	**Pre- requisite**	**Credits**
29	Work Integrated Learning 1 (Experiential Learning)	WF311	Only TWO failed courses outstanding	60
30	Work Integrated Learning 2 (Experiential Learning)	WF321	WF 311	60
Total Semester 5 and 6 Credits (Year 3)				120
Total Qualification Credits				372

YEAR 1: FIRST SEMESTER SYLLABUS

FB111	FORESTRY BOTANY
Objectives	To understand the principle of plant physiology, reproduction and taxonomy, and the roles of inheritance and ecology. To identify the various species of flora and fauna occurring in state and private plantations as well as in indigenous forests.
Course Outline	Introduction to and classification of plants (commercially important species); the collection and preparation of herbarium specimens; morphology of Spermatophyte; systematic botany; plant taxonomy; plant growth; growth reactions affecting timber. Basic plant tissues, characteristics of roots; stems and leaves; reproduction of plants; fruits. Flora and fauna
Instruction	3 lectures/week; Practical - Identification of tree species; Identification of plant cells inthe laboratory
Assessment	2 tests; Practical/Assignment; Examination
Credits	10
Pre-requisite	None

AF112	BASIC SCIENTIFIC CONCEPTS
Objectives	To understand the basic concepts of chemistry. To write balanced equations.To describe chemical reactions. To demonstrate simple experiments in the laboratory such as separation of simple mixtures, acid-base titration, determination of boiling and melting points. To understand qualitative analysis of anions and cations. To understand the basic concepts of physics and its relevance to forestry.
Course Outline	Matter and its properties; elements, compound, and mixtures; atomic weights, formula weight; volumetric analysis and calculations. Energy: forms of energy and sources; atomic structure and periodic table; chemical bonding; acids, base and salts and their applications in agriculture; the mole concepts: metals, nonmetals, and metalloids; properties of water; air composition and air pollution; oxidation-reduction reactions. Introduction to organic chemistry: chain formation of carbon, structure, and names of unbranched alkane; alkenes; primary alcohols. Gases, liquids, and solids. Physical quantities and their measurements: mass, length, time, density, speed, acceleration. Principles of gravity and friction. Definition and principles of heat, heat, humidity. Pressure, work, power, energy, and energy transfer. Electricity and elementary magnetic theory; light; basic machines.
Instruction	2 lectures/week; Practical – conduct chemistry and physics laboratory experiments.
Assessment	2 tests; Practical/Assignment; Examination; Presentation
Credits	8
Pre-requisite	None

AF113	APPLIED MATHEMATICS
Objectives	On completion of the instructional offering the student should be able to know or understand: Mathematical Preliminaries. Some Mathematical Preliminaries, Arithmetic Operations, Fractions, Solving Equations, Unit Conversions, Currency Conversions, Simple Inequalities, Calculating Percentages. The Straight Line and Applications. The Straight Line, Mathematical Modeling, Applications: Demand, Supply, Cost, Revenue, Elasticity of Demand, Supply and Income, Budget, and Cost Constraints. Simultaneous Equations. Solving Simultaneous Linear Equations, Equilibrium and Break-even, Consumer and Producer Surplus. Differentiation and Applications. Slope of a Curve and Differentiation, Applications of Differentiation, Marginal Functions, Average Functions, Optimization for Functions of One Variable, Economic Applications of Maximum and Minimum Points, Elasticity, and the Derivative. Integration and Applications. Integration as the Reverse of Differentiation, The Power Rule for Integration, The Definite Integral and the Area under a Curve, Consumer and Producer Surplus.
Course Outline	Measurements: basic and derived units and applications; integers, their operation and application; factors multiples and application; vulgar and decimal fractions; degree of accuracy – tolerance, significant figures, decimal places, rounding off and rough checks; means – theory practical use of averages, ratio percentages; powers; logarithms; roots; basic algebraic factors; formulae and linear
Instruction	2 lectures/week; Tutorials
Assessment	Three-hour Examination, Two Tests, Two Assignments and/or practical reports.
Credits	8
Pre-requisite	None

AF111	COMMUNICATION
Objectives	To develop students' understanding of the principles, concepts, and theories of effective communication in technical and professional contexts. To equip students with oral communication and presentation skills for effective delivery of technical information. To enhance students' academic and professional writing skills for clear, logical, and well-organized technical communication.
Course Outline	**Communication Concepts and Theories** (Definition of communication; interpersonal communication process and models; Elements of communication; communication contexts; barriers and strategies to overcome communication barriers) **Small group communication** (Definition of a small group; Virtual group communication; group formation and conflict management strategies; group dynamics) **Oral presentation (**Oral presentation and public speaking: audience analysis: adapt the presentation to a variety of audiences) **Report Writing (**Different types of reports; systematic report-writing process; organizing reports logically; principles of graphic presentation**;** Report format for a specific purpose) **Academic Writing** (Stages of composing in the academic writing process; construct an appropriate topic, essay writing, citation, and references) **Meetings** (Meeting etiquette; Notice and agenda of the meeting; minutes taking; chairing of meeting strategies: office bearers and their duties)
Instruction	3 lectures/week; 1 Practical (Conflict management exercises; Oral presentations and public speaking practice session; prepare notice, agenda, and take minutes while performing different meeting roles, chairperson, secretary, etc.; Essay and report structure, referencing, and writing process; Construction and interpretation of graphics (tables, charts, diagrams) in technical reports)
Assessment	2 tests; Practical/Assignment; Examination; Presentation
Credits	8
Pre-requisite	None

FS111	FOREST ECONOMICS 1
Objectives	To understand the basic economic problem of relative scarcity. To understand the process of production, specialization, and exchange. To understand the principles of demand, supply, andprice determination. To distinguish the effect on demand and supply of changes in various factors. To understand the basics of production economics.
Course Outline	Introduction to economic concepts; Production factors; The functions of the economy; The role of prices and money in the economy; Structure of the economy (Circular flow); Forestry in the economy; Introduction to forestry production economic theory; The production function, cost functions, input, and output optimization
Instruction	2 lectures/week; Practical - Assignment and exercises to determine forestry contribution to the economy; Excursions to forestry-related industry to reinforce knowledge obtained inclass
Assessment	2 tests; Practical/Assignment; Examination; Presentation
Credits	10
Pre-requisite	None

AF114	COMPUTER APPLICATION
Objectives	To create graphs, charts and insert images in documentsusing Excel. To import data from Excel into MS Word. To prepare professional documents by integrating Word and Excel features.
Course Outline	Using spreadsheets for data entry. Data analysis skills (graphs), charts and image insertion skills. Integrating spreadsheet files into a word processing document, creating PowerPointpresentations.
Instruction	2 lectures/week; Practical - Seminar paper writing andpresentation Citations; Article summaries
Assessment	2 tests, Practical/Assignments; Examination
Credits	8
Pre-requisite	None

FC111	FORESTRY PRACTICAL 1
Objectives	To satisfactorily perform different community forest and commercial forestry 0. establishments, tendering routine practical under supervision. To operate forest machinery with care.
Course Outline	All forestry fieldwork operations
Instruction	1 day/week
Assessment	Reports
Credits	8
Pre-requisite	None

YEAR 1: SECOND SEMESTER SYLLABUS

SV121	SILVICULTURE I (NURSERY PRACTICE)
Objectives	To understand raising and tendering of seedlings in the nursery using different propagation methods. To locate, prepare and administer forest nursery. To obtain quality seeds; manage seeds and propagate plants.
Course Outline	Introduction to and short history of nursery practice in South Africa; Siting and layout of nurseries, growing media; mycorrhiza inoculation; nursery legislation; Nursery administration; Tree breeding; Sexual and vegetative plant propagation; Nursery organization; Seed collection and seed orchard; Seed germination, treatment, and testing; Seed storage; direct and indirect sowing procedures; disease management in the nursery; plant quality.
Instruction	3 lectures/week; Practical - Nursery Activities (e.g. seed treatment, sowing etc.); Visits of commercial nurseries, small-scale and medium-scale (Hands-on activities); Seed collection, treatment (testing) and storage.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	None

FE121	FORESTRY ENGINEERING I
Objectives	To equip students with engineering principles for problem solving in forest engineering; To understand machine operating principles, logging tools and accessories.
Course Outline	Elementary mechanics, forces, and acceleration. Newton's Laws of Motion. Systems of forces, resolution, Resultant and equilibrium for concurrent forces. Two-dimensional force systems involving moments and equilibrium. Behavior of engineering materials. Young's modulus yields strength, ultimate strength. Internal combustion engine principles. Logging Tools and accessories for forest operations. Timber cutting operation.
Instruction	3 lectures/week; Practical - Visits nearby plantation forests to view harvesting operations; Identification of harvesting equipment and purpose; Operation of four and two stroke engines.
Assessment	2 tests, Practical/Assignments; Examination; Reports.
Credits	8
Pre-requisite	

SS121	INTRODUCTION TO SOIL SCIENCE
Objectives	To describe and explain origins of soil, the factors involved in soil formation and weathering, soil physical and chemical properties, and soil-water plant relations.
Course Outline	Soil formation, rocks and minerals including Alumina-silicate clay minerals; Factors involved in soil formation and weathering; Soil chemistry; Origin and significance of negative surface charges; Acid- based saturation; Soil and water suitability; Nutrients and their availability; Soil physical properties; Soil texture and structures; Bulk and particle density; Soil porosity and permeability; Soil consistency and colour; Soil water; water retention forces; soil water potential and plant-soil water relations; water movement; water management.
Instruction	2 lectures/week; Practical - Observations of different minerals; mechanical analysis; chemical analysis; determination of water-holding capacity.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

FI121	FORESTRY INFORMATION SYSTEMS
Objectives	To differentiate between sustainable and unsustainable land use systems. To analyse different land use systems, using GIS and remote sensing techniques. To undertake land survey and suitability assessments.
Course Outline	Introduction to land use systems; Determination of land characteristics; GIS and Remote Sensing; Geographic Information System background to forestry study; Photogrammetric and forest resource mapping; Introduction to Environmental Impact Assessment; Land suitability and Land survey.
Instruction	3 lectures/week; Practical-Full Forest map reading; Basics of GIS; Use of GPS instrument (in partnership with stakeholders); Case studies on EIA; Undertake an EIA of a forest setting.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	None

FM121	FOREST MANAGEMENT 1
Objectives	To understand principles and the history of forest management. To understand the tree and stand measurements parameters. To have knowledge of the present and future of the forestry industry. To have an understanding of timber production cycles.
Course Outline	Management principles, History, Present & future of Forestry, Forest policy, Timber production cycle, Measure tree & stand parameters.
Instruction	3 lectures/week; Practical - Identification and use of tree measuring equipment; Measuring and recording data; Working out timber production yield for given cycle
Assessment	2 tests, 2 Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

EL121	ENVIRONMENTAL LAW
Objectives	To understand the history of forest law, policies and protocols and agendas. To understand the impact of global environment changes and sustainable development. To apply the basic principles of South African law, follow procedures with regard to the law and be conversant with the Forest Act, NVFFA, the Agricultural Resources Act, the Mountain Catchment Areas Act.
Course Outline	History of forest law; Introduction to forest policies (purposes); Protocols and Agendas; Forestry history in south Africa (plantation, woodlots, natural forests); global environmental changes; certification and sustainable development; Veld and Forest fire Act; National Forest Act; National Forest action plan; National water act; Cites; National Environmental Management Act; New amendments review of affected acts.
Instruction	3 lectures/week; Practical - Case studies; Visit to a nearby forest to enable students toidentify protected. Trees: Visit to Game Reserve to enable students to identify protected Flora and Fauna.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

FC121	FORESTRY PRACTICAL 2
Objectives	To perform different community forest and commercial forestry establishment, tendering routine practical tasks under supervision. To operate forest machinery with care.
Course Outline	All forestry fieldwork operations including Silviculture and harvesting operations, forestproduct processing
Instruction	1 day/week
Assessment	Reports
Credits	8
Pre-requisite	None

YEAR 2: FIRST SEMESTER SYLLABUS

SV211	SILVICULTURE 2
Objectives	To understand techniques of forest plantation establishment using different methods. To apply different silvicultural practices. To understand different environmental factors affecting Stand growth. To carry out weed management practices inthe forest.
Course Outline	Plantation establishment and regeneration; Silvicultural Systems; Species site compatibility; vegetation management (chemical and mechanical weeding); effects of silvicultural practices (thinning, pruning, coppicing) and environmental factors on stand growth, conservation of natural ecosystem.
Instruction	3 lectures/week; Practical - Assessment and marking for thinning; Chemical (calibration of herbicides) and mechanical weeding; Site establishment techniques; Pruning.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	SV121

CF211	COMMUNITY FORESTRY
Objectives	To define the concept of development, rural and community development and culture. To discuss the origins of community development and its failures. To understand aims and objectives of community development. To define the process of change. To explain the basic extension concepts and principles necessary for the effective communication of extension messages and technologies aimed at improving the quality of rural life.
Course Outline	Introduction to community forestry; Concept of development and underdevelopment; Rural and community development; Importance of integrated community development; The physical and socio- cultural environment; The community development process; Resource and need identification-wants and needs defined, needs assessment, appropriate technology for community development; Community development programmes and projects planning, monitoring and evaluation; Roles and skills of community workers. Community forestry participation techniques and methods; Working with people; Speaking and preparation of visual aids.
Instruction	3 lectures/week; Practical - Case studies.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

FE211	FORESTRY ENGINEERING II [TIMBER HARVESTING AND WORK SCIENCE]
Objectives	To select and apply cost-effective and appropriate timber harvesting techniques and systems that take into account the human factor, including health and safety. To have an understanding for production, productivity, and time concepts applicable totimber harvesting operations. To have an understanding and apply the planning process at both tactical and operationallevel.
Course Outline	Specialisation in timber felling, extraction and conversion; Timber harvesting equipment nomenclature; Product and assortment definitions and specification; Timber harvesting methods and systems; Machine and systems costing; Harvest planning; impact of harvesting on the environment; utilization of biomass for bioenergy. Forest work science: Work and time study; Ergonomics; health and safety in forest operations.
Instruction	3 lectures/week; Practical - Chainsaw training; Visits nearby plantation forests to view harvesting operations; Identification of harvesting equipment and purpose; Harvesting planning (on-site).
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	FE 121

FM211	FOREST MANAGEMENT II
Objectives	To draw an annual plan of operations. To classify forest andwoodlands. To understand and work out different sustained yield processes.
Course Outline	Introduction to forest and woodlands management; Annual plan of operations; Sustainable Forest management; classification and distribution of forest and woodlands; Sustained yield determination of forest and woodland produce; Management plan assessment.
Instruction	3 lectures/week; Practical - Field visits; Development of forest management plan.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	FM 121

FP211	FOREST PROTECTION (PEST AND DISEASE)
Objectives	Learners should be able: To identify and categorise forest pests, diseases, and health conditions. To establish links between genotype, environment, silviculture, and forest health. To assess and recommend suitable integrated foresthealth interventions.
Course outline	Introduction to entomology: insects' structure and functions, growth, and development. Insects' classification and identification of the commonest orders and families of forest importance. Insects and environment. Forest insect problems in the tropics with emphasis on Eastern and Southern Africa. Forest insect pest management. Handling of forest insects (collecting, mounting preservation and postage). Introduction to Forest Health Monitoring and Forest Pathology, classification and identification of forest diseases, types of disease agents, common tree diseases in South African forest plantations, disease resistance in trees, disease control and reporting.
Instruction	2 Lectures/week, 1 practical/week.
Assessment	2 tests, Practical reports/Assignments; Examination
Credits	8
Pre-requisite	None

MI211	FOREST MENSURATION AND INVENTORY
Objectives	To use different types of tools used in tree measurements and recording of the assets in theforests. To sampling procedures during tree measurements. To plan and conduct forest inventory.
Course Outline	Planning; Determination of diameter breast height (individual trees and stand), height, volume, age and forest density or basal area; sampling techniques and their application in forest inventory, Tree volume estimation (individual trees and stand); Volume tables.
Instruction	3 lectures/week; Practical-Taking Forest inventory using relevant equipment; Basic processing of data for proper management; Identification and uses of different instrumentsfor tree measurements.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	FI121

EM211	ENVIROMENTAL MANAGEMENT
Objectives	To equip students with an understanding of various aspects of environmental management within the forestry perspective. This module will focus on the wide range of environmental implications associated with the forest management operations for both commercial and indigenous forestry.
Course Outline	Basic Environmental Impact Assessment study, forest site classification, forest certification standards, water catchment areas, delineation, impact of soil erosion on forestry, global perspective of climate change effect on forestry, biodiversity conservation and forestry aesthetics
Instruction	3 lectures/week; Practical, Group discussions, Field trips
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	None

YEAR 2: SECOND SEMESTER SYLLABUS

FE221	FOREST ENGINEERING III [FOREST ROADS AND LOGISTICS]
Objectives	To understand and apply forest roads construction and maintenance techniques. To understand forest road network management and be able to develop such a management plan. To understand and apply cost effective assortment and biomasshandling and transportation. To understand the impact of secondary transport and logistics on the timber harvestingsupply chain.
Course Outline	Forest roads access development, construction, and maintenance; Forest Road network management; Secondary transport of biomass and logistics (including costing) in timber harvesting supply chain taking into account roads, the environment and certification.
Instruction	3 lectures/week; Practical - visits to forest plantation
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	FE 211

NR221	INTEGRATED NATURAL RESOURCE MANAGEMENT
Objectives	To implement the production, processing, storage, and marketing methods relating to food, fibre and other products derived from non-conventional animals, and the control ofpests and diseases. To understand the significance of non-timber products. To understand the ecology and conservation strategies of flora and fauna.
Course Outline	Review production methods, Including disease and pest control for economic insects such as mopane worms, silkworms; apiculture; aquaculture; wildlife and game farming (Harvesting, processing, storage and marketing strategies for the products and by- products); ecology and conservation of fauna and flora; the importance of forest ecosystem in ecotourism.
Instruction	3 lectures/week; Practical - Visits to game reserves
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	None

NC221	NATURE CONSERVATION
Objectives	To introduce students to the field of conservation biology to enable them to make informed conservation decisions of local, national, regional and international interest.
Course Outline	Legislative context, regional protocols, and international conventions and processes, Conservation Biology, Ecosystems, Restoration Ecology, Conservation Planning for theForest Biome, Sustainable Development
Instruction	3 lectures per week (including guest lectures), Group discussions, Practical sessions,Projects
Assessments	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	None

HR221	HUMAN RESOURCE MANAGEMENT
Objectives	To understand the integration of human resource strategy and business strategy.
Course Outline	Introduction to human resource management; human resource and business strategy; human resource planning; recruitment, selection, and induction; employee training and development; performance management; compensation; employee benefits and services; human and employment relations; the legal environment and human resources.
Instruction	2 lectures/week; Practical - Case studies on human resource-related issues.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

FP222	FIRE PROTECTION
Objectives	To carry out preventive and curative measures against fire, e.g. establishment and maintenance of fire breaks and firefighting points, weather condition warning systems and information on fire behavior to the public. To carry out and organize firefighting activities in communities.
Course Outline	Factors that influence fire behavior (weather, climate, heat, combustibility); Causes of fires; Types of forest fires; Methods of fire prevention and suppression; Types of fire-belt and break construction; Legal requirements; Fire protection plans and courses of action; Safety and survival measures; Case- histories of forest fires; Fire-control planning in conjunction with rural communities, local authorities and municipalities.
Instruction	3 lectures/week; Practical - visits to plantations
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	None

FS221	FOREST ECONOMICS 2
Objectives	Identifies economic resources and their value. Explains relationships in demand, supply, and price of forest products. Uses the normal forest concept to discuss forest products supply. Characterizes the main issues in common resource management. Make appropriate decisions to improve efficiency. Uses economic analysis tools to identify costs and benefits to forest enterprise. Performs simple economic appraisals. Discusses the economic concepts of land value, maximum site potential and ideal rotation length. Describes South Africa's domestic and export trade in forest products using Forestry SA and Crickmay and Associates information resources. Explains common categories of land tax and lease arrangements. Characterizes land rights mechanisms and exclusiveness of tenure.
Course Outline	Economic concepts, Demand, supply and pricing of forest products, Timber supply and harvest regulation, Role of economics in forest resource management, Production efficiency, Economics and decision making, Investment appraisal, Land expectation value and rotation length, Trade in forest products, Forest taxation, Land tenure.
Instruction	3 lectures/week; Practical, visits to sawmills and pole treating plants
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	10
Pre-requisite	Forestry Economics 1 (FS111)

FP221	FOREST PRODUCTS PROCESSING
Objectives	To equip students with practical skills in forest products processing.
Course Outline	Forest products variety and production quantities in SA, Roundwood processing to poles, CCA pole treatment, Creosote pole treatment, Sawlog/pole/pulpwood procurement, Sawmill types, Roundwood sawmilling, Mobile sawmilling, Sawmilling products and waste handling, saw types, application and maintenance, stacking of sawn timber, Timber drying, Paper production, Charcoal production
Instruction	3 lectures/week; Practical, visits to sawmills and pole treating plants
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

YEAR 3: FIRST SEMESTER SYLLABUS

WF311	WORK INTEGRATED LEARNING
Objectives	To apply knowledge and develop practical abilities essential to the needs of the industry. To deal with real life issues and problems and develop confidence in dealing with both. To enhance the employability of learners by virtue of improved technical and practical competencies and the development of personal attributes such as accepting responsibility and using initiative, punctuality and acceptance of instructions, ability to get on with people, ability to communicate with supervisors, and on the job decision making.
Course Outline	Forestry operations: Land preparations, marking for pitting, planting, weeding (mechanical& chemical), blanking, thinning, pruning, delineation
Instruction	Six-month placement training.
Assessment	On-site evaluation (student & on-field supervisor), Logbook, Written Reports, Oral Presentation.
Credits	60
Pre-requisite	Only TWO failed courses outstanding

YEAR 3: SECOND SEMESTER SYLLABUS

WF321	WORK INTEGRATED LEARNING
Objectives	To apply knowledge and develop practical abilities essential to the needs of the industry. To deal with real life issues and problems and develop confidence in dealing with both. To enhance the employability of learners by virtue of improved technical and practical competencies and the development of personal attributes such as accepting responsibility and using initiative, punctuality and acceptance of instructions, ability to get on with people, ability to communicate with supervisors, and on the job decision making.
Course Outline	Forestry operations: Administration, harvesting operations, developing annual plan ofoperation
Instruction	Six-month placement training.
Assessment	On-site evaluation (student & on-field supervisor), Logbook, Written Reports, OralPresentation.
Credits	60
Pre-requisite	WF 311

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

AGRICULTURE PROGRAMME

AGRICULTURE PROGRAMME

1. GENERAL INFORMATION ABOUT QUALIFICATIONS

Fort Cox Institute offers two three-year National Diploma Programmes, namely Diploma in Agriculture and Diploma in Forestry. A Diploma in Agriculture has three options, Animal Production, Crop Production and Agribusiness. All these Programmes are fully accredited by the Council on Higher Education (CHE) through its Higher Education Quality Assurance Committee (HEQC). The full re-accreditation status was reconfirmed in 2012.

Students who attain any of these Programmes get credits towards an Advanced Diploma or a B. Agric programme. In addition, the Fort Cox Agriculture Diploma Programme is recognized by the University of Fort Hare in terms of awarding credits in similar courses completed at the Institute subject to certain conditions.

2. MISSION

To contribute to the pool of students in Eastern Cape and Southern Africa who have an interest in Agriculture to acquire a higher Education Diploma in Agriculture which will enhance their marketability to start a career in this and related fields. Students will apply their knowledge of science and technology to further their education in agriculture and thereby contribute to the leadership role in Agriculture played by the Eastern Cape and South Africa in the global environment.

3. SHORT COURSES

During their studies students will be able to attend short courses presented by the commercial Agricultural Sector in various fields. Some are Tractor driving, Artificial Insemination, Wool Classing, Livestock Judging, Cheese making, Essential Oil Production, Blue Berry Production, etc.

4. EXISTING ACADEMIC PARTNERSHIPS

The Department of Agriculture in Fort Cox Institute of Agriculture and Forestry is fortunate to have various academic partnerships with institutions, companies, and non-governmental organizations. These partnerships enhance the academic programmes by combining projects and guest lectures. Employment opportunities for graduates have increased due to these partnerships as students are exposed at an early stage to the various fields of employment as well as the employers. Current partnerships are:

Rohde University, University of Fort Hare, Nelson Mandela Metropolitan University (NMMU), Department of Rural Development and Agrarian Reform (DRDAR), Department of Agriculture, Forestry and Fisheries (DAFF), Department of Rural Development and Land Reform (DRDLR), Sovereign Foods, Amadlelo Agri, Agricultural Research Council (ARC - Soil and Water Institute and Roodeplaat), National Agricultural Marketing Council (NAMC), Technola Industries, Eastern Cape Development Corporation (ECDC), East London IDZ (Industrial Development Zone), Riverside Advisory Services, Development Bank Of Southern Africa (DBSA), Cape Concentrates, Savory Institute and the Olive Foundation.

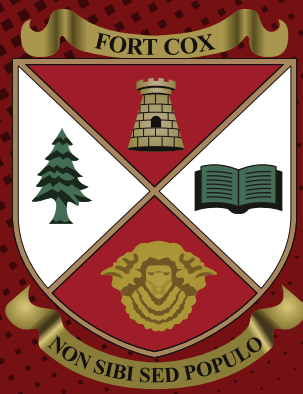
EXIT LEVEL OUTCOMES

Understanding the Principles of Agricultural Production and the use of the different resources in an environmentally sustainable way. (120 Credits)	Understand and convey the basic principles in various agricultural production systems.	Define and describe the basic principles involved in agriculture. Demonstrate a working knowledge of living entities, plant and livestock, soils and agricultural economics.
	Understand the basic principles of natural resource ecology, conservation, and sustainabilityfor Agricultural development.	Identify and explain basicecological principles. Demonstrate knowledge of the concepts of conservation and sustainability.
	Have an understanding of indigenous and commercial methods and approaches to the utilization of natural resources.	Categorization of traditional and commercial systems in agriculture Selection and application of traditional and commercial knowledge in agrarian Development.
	Understand basic information collection, administration, management skills and development economics.	Display observational competency in fieldwork, datainformation collection. Demonstrate the ability to effectively communicate information to specific. Audiences.
Design, apply and implement the practices of agriculture in sustainable, socio- economic local, regional, and national development and production. (120 credits)	Demonstration of an understanding of the agricultural industry, technical and economic aspects of animal and crop production.	Describe the role of plants and animals in agriculture. Demonstrate knowledge of the principles involved in the agricultural Industry. Successfully apply the theory in a South African agricultural context.
	Understand and apply production and management systems in the various fields of agriculture	Identify and categorize a variety of production and management systems. Provide evidence of practical experiencein these production systems
	Design and implement participatory, agriculturally oriented development for extension services.	Demonstrate theoretical andpractical competency. Design an extension tool to obtain specific information.
	Collect and use agriculturally related information of relevance to sustainable development and production.	Demonstrate the ability to utilize and apply collected information in a variety of agrarian development situations. Display appropriate knowledge and understanding of communication aspects critical to development of Agricultural activities.
Evaluation, compares, advises, and integrates appropriate agricultural management strategies in order to promote sustainable land use practices, improve rural livelihoods and improve commercial production. (120 credits)	Recognition and application of value systems within social, cultural, and economic diversity.	Critically analyze interaction between different production, economic, environmental systems, and culturalgroups. Demonstrate awareness and understanding of the personality traits, attitudes, and skills necessary for successful interactions within agricultural development.
	Design a development plan for farm or agricultural management plan and implementation thereof.	Drafting appropriately designed plans to incorporate interventions aimed at obtaining realistic outcomes. Utilize multi resource inventories, appropriate technology, and indigenousknowledge. Analyze and evaluate different management options for sustainabilityand improved production.

	Synthesize the influence of various policies and legislation on agriculture and related fields and to be able to advise on optimum ways to utilize this knowledge.	Demonstrate critical knowledge of sustainable and commercially economical agricultural management within the appropriate legislation. Assemble and convey knowledge of policies and legislation of agriculture in the South African environment.
	Advice on the development or management of subsistence, small scale and commercial agricultural income- generating enterprises.	Write a report and present it to peers and external examiners on the practical application of the theory gained in experiential training. Compare and evaluate holistic approaches integrating acquired skills and attitudes in the form of case studyanalyses.

5. CRITICAL OUTCOMES EMBEDDED IN THE SPECIFIC OUTCOMES

a. Identify and solve problems with critical and innovative thought.
b. Effectively partake as a member of a team or group.
c. Effectively apply science and technology while demonstrating responsibility towards the environmentand health of others.
d. Communicate effectively.
e. Develop opportunities as an entrepreneur.



FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

CROP PRODUCTION

Courses		Course Code	Pre-Requisites	Credits
1	Applied Mathematics	AF113		8
2	Basic Scientific Concepts	AF112		8
3	Communication	AF111		8
4	Computer Application	AF114		8
5	Farm Machinery and Workshop Practice	AE111		8
6	Plant Botany and Physiology	CS111		8
7	Introduction to Crop Production	CS112		8
8	Introduction to Agricultural Economics	AB111		8
				64
Courses		**Course Code**	**Pre-Requisites**	**Credits**
9	Introduction to Soil Science	SS121		8
10	Plant Protection	CS121		10
11	Fruit Production	HS121	CS111	8
12	Agricultural Extension	AX121		10
13	Irrigation Principles	AE121		10
14	Soil and Water Conservation	SS122		8
15	Plant breeding and biotechnology	CS122		6
Total Semester 2 Credits (Year 1)				60
Total Year 1 Credits				124
Courses		**Course Code**	**Pre-Requisites**	**Credits**
16	Vegetable Production	HS211		12
17	Soil fertility & Plant Nutrition	SS211	SS121	10
18	Citrus Production	HS212		8
19	Farm Structures	AE211		12
20	Entrepreneurship	AB212		8
21	Business Management	AB211	AB111	8
22	Environmental Management & Sustainability	SS212		8
Total Semester 3 Credits (Year 2)				64
Courses		**Course Code**	**Pre-Requisites**	**Credits**
23	Farm Mechanization	AE221	AE111	12
24	Agro-Processing	CS221	HS211	10
25	Field Crop Production	CS222	CS112	12
26	Landscaping & Ornamental Horticulture	HS221		10
27	Land Use Planning & Management	FC221	SS121	10
28	Agricultural Project	FC222		10
Total Semester 4 Credits (Year 2)				66
Total Year 2 Credits				130
Courses		**Course Code**	**Pre-Requisites**	**Credits**
29	Work-Integrated Learning (Experiential Learning)	WC311	Only TWO failed courses outstanding	60
30	Work-Integrated Learning (Experiential Learning)	WC321	WC 311	60
Total Semester 5 and 6 Credits (Year 3)				120
Total Qualification Credits				372

YEAR 1-FIRST SEMESTER

AF113	APPLIED MATHEMATICS
Objectives	To impart mathematical skills and knowledge necessary to develop proficiency in analytical reasoning, and utility in modeling situations and solving real world problems.
Course Outline	Mathematical basics; Priorities and laws of operations, variables, fractions, powers and roots; Functions and representations of functions; Linear equations in one variable; Simultaneous linear equations in two variables; Linear inequalities in one variable; Systems of linear inequalities in two variables; Mathematical mensuration; Perimeter and area, volumes; Statistics and probability; Definitions of statistical terms; Frequency distributions, histograms, frequency polygon, cumulative frequency polygon; Measures of central tendency; Measures of dispersion.
Instruction	3 lectures/week; Tutorials
Assessment	3 hours examination, two tests; two Assignments and/or tutorials
Credits	8
Pre-requisite	None

AF112	BASIC SCIENTIFIC CONCEPTS
Objectives	To introduce students to the basic concepts of Physics and Chemistry as applied inAgriculture and Forestry.
Course Outline	Matter and its properties; Elements, compound, and mixtures; Atomic weights, formula weight; Volumetric analysis and calculations; Energy: forms of energy and sources; Atomic structure and periodic table; Chemical bonding; Acids, base and salts and their applications in agriculture; The mole concepts: metals, non-metals, and metalloids; Properties of water; Air composition and air pollution; Oxidation-reduction reactions. Introduction to organic chemistry: chain formation of carbon, structure, and names of unbranched alkane; alkenes; primary alcohols; Gases, liquids, and solids; Physical quantities and their measurements: mass, length, length, time, density, density, speed, acceleration; Principles of gravity and friction; Definition and principles of heat transfer; Humidity; Pressure, work, power, energy, and energy transfer; Electricity and electromagnetism. Light; Basic electrical machines.
Instruction	3 lectures/week; 1 practical /week (chemistry and physics laboratory experiments)
Assessment	2 tests, 2 practical/assignment, one-3-hour examination, presentations
Credits	8
Pre-requisite	None

AF111	COMMUNICATION
Objectives	To develop students' understanding of the principles, concepts, and theories of effective communication in technical and professional contexts. To equip students with oral communication and presentation skills for effective delivery of technical information. To enhance students' academic and professional writing skills for clear, logical, and well-organized technical communication.
Course Outline	Communication Concepts and Theories (Definition of communication; interpersonal communication process and models; Elements of communication; communication contexts; barriers and strategies to overcome communication barriers) Small group communication (Definition of a small group; Virtual group communication; group formation and conflict management strategies; group dynamics) Oral presentation (Oral presentation and public speaking: audience analysis: adapt the presentation to a variety of audiences) Report Writing (Different types of reports; systematic report-writing process; organizing reports logically; principles of graphic presentation; Report format for a specific purpose) Academic Writing (Stages of composing in the academic writing process; construct an appropriate topic, essay writing, citation, and references) Meetings (Meeting etiquette; Notice and agenda of the meeting; minutes taking; chairing of meeting strategies: office bearers and their duties)
Instruction	3 lectures/week; 1 Practical (Conflict management exercises; Oral presentations and public speaking practice session; prepare notice, agenda, and take minutes while performing different meeting roles, chairperson, secretary, etc.; Essay and report structure, referencing, and writing process; Construction and interpretation of graphics (tables, charts, diagrams) in technical reports)
Assessment	2 tests; Practical/Assignment; Examination; Presentation
Credits	8
Pre-requisite	None

AF114	COMPUTER APPLICATION
Objectives	To equip students with basic computer skills to enable them utilise programs such as Microsoft Windows and Microsoft Office.
Course Outline	Document processing using Microsoft Word; Spreadsheet processing using Microsoft Excel; Using Microsoft Excel spreadsheet for data entry, process, and analysis; Creation and exportation of charts; Integrating spreadsheet files into a word processing document; Create presentation using Microsoft PowerPoint.
Instruction	3 lectures/week; 1 practical/week (presentation slides; document formatting; presentations citations; article summaries)
Assessment	2 tests, 2 practical/assignments; one-3-hour practical examination
Credits	8
Pre-requisite	None

AE111	FARM MACHINERY AND WORKSHOP PRACTICE
Objective	To acquire practical skills and theoretical knowledge to perform the unspecialized engineering activities for effective planning and management of farm operations.
Course Outline	Internal combustion engine: basic engine parts and their functions, four stroke diesel and petrol engines, two stroke engines, tractor transmission, tractor engine construction, basic mechanical workshop tools; Tractor controls: Power take-off, three point linkage, tractor hydraulics, external hydraulics; Field operations: primary and secondary tillage, tillage implements; conservation tillage; Farm electricity: Electrical terminology (power, current, voltage, resistance) and calculations, electrical materials e.g. wires, cables, switches, etc. , electrical instruments (e.g. voltmeter, ammeter, multi- meter), definition of single & triple phase electricity, use of protective devices such as fuses, MCBs, ELCBs and relays including earthing, basics of generators & electric motors; Fitting: Plumping: Plumbing in domestic and industrial applications, plumbing tools, pipe joints and fittings, cutting, threading and laying of pipes with different fittings using PVC, copper, aluminum, LDPE, HDPE pipes, using PVC pipes; Carpentry: Types of wood, hand and power tools; types of wooden joints; safety precautions in carpentry shop.
Instruction	3 lectures and 1 Practical per week, Group work, Excursions.
Assessment	2 Practical reports/Assignments, 2 Tests, one-3-hour examination, presentations,
Credits	8
Pre-requisite	None

CS111	PLANT BOTANY AND PHYSIOLOGY
Objective	To introduce students to the basic principles of plant cell structure, metabolism, plant tissues, anatomy, and physiology
Course Outline	Introduction to plants (plant kingdom, plant morphology/structure, plant growth – primary and secondary growth); Plant physiology; Environmental factors and plant growth; Plant cell (cell types, structure, organelles, and their functions); Plant tissue and anatomy: Apical meristems; Tissue types; Morphology of flowering plants (roots, stems, leaves, flowers, and fruits, seeds); Secondary growth; Modifications of roots, stems and leaves.
Instruction	3 lecture/week, practical arranged (Use of the microscope; Microscopy, preparation of slides and types of tissues; identification of plant organs and structure of flowering plants; plant experiments)
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	8
Pre-requisite	None

CS112	INTRODUCTION TO CROP PRODUCTION
Objective	To provide learners with an understanding of the basic principles of crop production as and understanding these principles form the foundation for crop production practices and are also basic to other forms of agriculture.
Course Outline	Introduction to agro-meteorology; Origin, classification, and nomenclature of economic crops; Plant physiology; Seed quality, germination, crop yield, plant growth and development; Mineral nutrition; Plant propagation and allelopathy.
Instruction	2 lectures and 1 practical per week (identification of different crop seeds, fertilizers,herbicides, and pesticides).
Assessment	2 major tests, one- 3- hour examination, practical reports, assignments
Credits	8
Pre-requisite	None

YEAR 1: SECOND SEMESTER

AB111	INTRODUCTION TO AGRICULTURAL ECONOMICS
Objectives	To introduce students to the basic economic problem of relative scarcity, the process of production, specialization and exchange, and the principles of demand, supply and pricedetermination.
Course Outline	Introduction to economics; Economic systems; Production, income, and spending in the mixed economy; Demand, supply, and prices; Demand and supply in action; Elasticity; The theory of demand: the utility approach & indifference approach; Market structure: Overview and perfect competition
Instruction	3 lectures/week 1 Practical per week
Assessment	Practical reports, 2 tests, 2 assignments and 1 examination (1 x 3hr paper)
Credits	8
Pre-requisite	None

SS121	INTRODUCTION TO SOIL SCIENCE
Objective	To provide students with general background on the origin of soils, the soil forming factors and processes, soil properties, chemical reactions, and soil classification systems.
Course Outline	Introduction (definition, composition and functions); Rocks and minerals; Weathering processes; Soil forming factors; Soil forming processes (pedogenic processes), Soil profile (master horizon), Volume and mass relations; Soil colour, soil structure, soil texture, soil colloids; Types of colloids and their properties; Development of a surface charge; Flocculation and dispersion; Cation exchange capacity; Soil pH (acidity and alkalinity), soil pH and nutrient availability; Liming requirement; Soil organic matter; Types and sources of fertilizers, fertilizer application methods; Soil classification systems (South Africa, USDA and WRB classification systems); An introduction to soil mapping.
Instruction	3 lectures/week; 1 practical/week (texture analysis; pH & EC measurements; identification of master horizons; soil classification; bulk density; soil water content)
Assessment	Two major tests, one-3- hour examination, practical reports, assignments
Credits	8
Pre-requisite	AF112

CS121	PLANT PROTECTION
Objective	To introduce students to principles and practices of weed science, entomology, and plant pathology as a means for managing plant diseases, weeds and other pests that affect growth and development of agricultural crops
Course Outline	General introduction to crop protection; Major groups of agricultural pests, management and control methods (insect pests; nematodes, diseases, weeds); pests damage and monitoring methods; IPM; agrochemicals (storage; calibration; mixing, application, and safety)
Instruction	2 lectures/week; 1 practical/week; visits to Agro-chemical industry
Assessment	Two major tests, one- 2-hour examination, practical reports, assignments
Credits	10
Pre-requisite	None

HS121	FRUIT PRODUCTION
Objective	To provide students with knowledge and skills in production practices of selected fruit crops (tropical, subtropical, temperate and tree nuts).
Course Outline	Fruit industry overview, cultivation of tropical and subtropical fruit crops, cultivation of temperate fruit crops, Cultivation of Pecan & Macadamia nuts, post-harvest handling andphysiology.
Instruction	2 lectures/week; 1 practical/week (orchard floor management, orchard sanitation; pruning, scouting; maturity indexing; visits to orchards and pack houses
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	8
Pre-requisite	CS111

AX121	AGRICULTURAL EXTENSION
Objective	To develop students' understanding of the fundamental theories, systems, and practices that shape Agricultural Extension and its role in agricultural and rural development. To equip students with the knowledge and practical skills to apply participatory, communicative, and adult-learning approaches in agricultural extension practice
Course Outline	Concepts of Extension (Introduction to extension -definitions of agricultural extension, extension principles, roles of extension worker in agricultural development); History of extension (the origin of extension in different regions-developed & developing countries); Extension systems (types of extension systems – FSR/E; T&V); Applied adult learning theory (Characteristic of farmers, Learning principles related to characteristics of adults, conditions conducive for learning, Use of variety of teaching methods, improving effectiveness of farmers learning); Participatory rural appraisal and Methods, Guidelines for field participatory rural appraisal); Norms and Standards for extension and advisory service (Objectives of norms and standards, clients, guiding principles)
Instruction	3 lectures and 1 practical per week (meeting procedures, group discussions, public speaking, preparation of visual aids, farm visit planning, farm visits and analysis, presentations of farm findings, and case study analysis)
Assessment	Two major tests, one 3-hour examination paper, research reports, presentations, andassignments
Credits	10
Pre-requisite	None

AE121	IRRIGATION PRINCIPLES
Objective	To provide practical skills and theoretical knowledge on how and when to apply water to the soil in various farming contexts.
Course Outline	Irrigation basics; Soil moisture relationships; Water resources; Irrigation scheduling; Sprinkler irrigation; Drip irrigation; Water pumps; Plumping
Instruction	2 lectures and practicals per week (Irrigation scheduling, plumbing and installation of drip irrigation system, basic maintenance of sprinkler irrigation systems, install, start up and prime water pumps, basic pump maintenance, plumping); group work, Excursions.
Assessment	2 major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	10
Pre-requisite	None

SS122	SOIL AND WATER CONSERVATION
Objective	To provide knowledge and skills in basic principles of soil and water conservation, management strategies applied to optimize water use efficiency and reduce land degradation.
Course Outline	Soil and water resources; Soil erosion and types (water erosion, wind erosion, tillage erosion); Mechanisms and control measures; Soil loss estimation by universal soil loss equation; Mechanical structures and engineering techniques (structures, ponds, terraces, erosion control structures); Biological measures of soil erosion; Restoration of degraded soils, Water in the landscape; Water harvesting and conservation (water harvesting conservation planning; Rain water harvesting and conservation (RWH& C) practices: farm ponds, diversion furrows, trench beds, roof water harvesting, mulching, tied ridges etc.)
Instruction	2 lectures/week; 1 practical/week (RWH&C methods)
Assessment	2 major tests; 2 assignments/practical report; one 3-hour examination, presentations
Credits	8
Pre-requisite	None

YEAR 2- FIRST SEMESTER

CS122	PLANT BREEDING AND BIOTECHNOLOGY
Objective	To introduce the general principles, practices, and techniques used to breed plants, select traits, and develop crop cultivars including biomass feedstock crops.
Course Outline	Sources of genetic variation in plants; Plant's reproductive system and selection methods, Selection in self- and cross-pollinated crops and population structural changes; Approaches of selection to improve plant genetic potential, Roles of advanced tools in expedited cultivar improvement.
Instruction	3 lectures and 1 practical per week, Group work, Excursion
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	8
Pre-requisite	None

HS211	VEGETABLE PRODUCTION
Objective	To provide students with principles and practices commonly employed in cultivation ofvegetable crops.
Course Outline	Introduction to vegetable industry, Classification of vegetable crops, crop establishment; vegetable crop management practices; indigenous vegetable crops & food security; rainwater harvesting and conservation (RWH&C) practices for vegetable production. Controlled environment production & facilities and vegetable production practices; post- harvest handling of vegetable crops.
Instruction	3 lectures and 1 practical per week, group work, excursions
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	12
Pre-requisite	None

SS211	SOIL FERTILITY AND PLANT NUTRITION
Objective	To build students' understanding of soil fertility, plant nutrition and soil and plant tissue analysis
Course Outline	Factors affecting plant growth, Essential plant nutrients (plant nutrients, nutrient movement and absorption mechanisms, mobility in plant, plant deficiency symptoms, physiological role); Soil and plant tissue sampling and analysis methods; Nutrient levels in plants; Factors affecting soil fertility; Adsorption isotherms, Interpreting soil analysis reports (critical nutrient levels, fertilizer recommendations); Organic amendments; Soil fertility management; Environmental fate of non- essential elements and organic chemicals.
Instruction	2 lectures and 1 practical per week (pot experiments, soil and plant tissue sampling); Group discussions, Excursion; Interpretation of soil test reports
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	10
Pre-requisites	SS121

HS212	CITRUS PRODUCTION
Objective	To provide students with knowledge and skills in production practices associated withcitrus fruit crops.
Course Outline	Introduction to citrus industry (history, production areas, economic, nutritional, and medicinal importance); Citrus biology (vegetative citrus tree development and function, reproductive physiology); Cultivars and rootstocks; Citrus nursery practices; Soil and climatic requirements; Fertilization; Pests, diseases and IPM; Pack house practices; Harvesting and post- harvest handling and technology; post-harvest disorders and disease. Tree establishment training and pruning of trees; tree management; major pests, diseases and their control; nutritional environment , and cultural disorders)
Instruction	3 lectures/week, 1 practical (Identification of insect pests and diseases; safe handling of pesticides and herbicides, scouting, management of young and old fruit trees)
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	8
Pre-requisite	None

AE 212	FARM STRUCTURES
Objective	Acquire practical skills and theoretical knowledge to design and perform unspecialized engineering activities for the enhancement of planning and management of farm operations
Course Outline	Functional planning; Building engineering; Climate and environmental control; Boundary fencing; Farm access road construction and maintenance; Farm workshop; Greenhouses; Grain drying, handling and storage; Animal housing.
Instruction	3 Lectures /week, 1 Practical/week (scale drawing and interpretation; identification of building tools and materials; building elements and structures; demonstrations on the bag storage and stacking techniques; produce a detailed plan and design of a farmstructure of interest)
Assessment	Two tests, practical reports, two assignments and one presented research work, One-3-hour examination
Credits	12
Pre-requisite	None

AB 212	ENTREPRENEURSHIP
Objective	To equip students with understanding of entrepreneurship concepts in farming and agri-business environments and impart skills to apply entrepreneurship principles to establish, run and manage a successful farming business.
Course Outline	Entrepreneurial process dynamics; Entrepreneurial human capital; The entrepreneurial environment; Entrepreneurial intentions and opportunities; Preparing a business plan; Paths to entrepreneurship; Policy frameworks for start-ups; Strategic entrepreneurship, E-Commerce and entrepreneurship
Instruction	3 lectures/week, 1 practical/week (business plan development); tutorials cultivating business mind set scanning business environment , appraising the business opportunities, developing online business.
Assessment	Two major tests, one 3-hour examination paper, business plan, presentations, andassignments.
Credits	8
Pre-requisite	None

AB 211	BUSINESS MANAGEMENT
Objectives	To provide students with tools needed to measure management performance in terms of business functions ranging from production, marketing, financial and human resources management.
Course Outline	Introduction Business Management, Management and Decision Making, Production Management, Farm Planning and Budgeting, Marketing Management, Risk Management in Agriculture, Human Resource Management; Formation and function of companies and NGOs
Instruction	3 lectures/week; Practical - Case studies
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

SS 212	ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY
Objective	To provide the students with knowledge and skills related to the sustainable use of natural resources to maintain a balanced ecosystem.
Course Outline	Interaction between atmosphere, lithosphere, biosphere, hydrosphere and cryosphere; Key drivers of long-term global environmental change; Energy transfer; Resource security; Sustainable farming; Biodynamics; Soil conservation; Environmental pollution; Water resources (water conservation and water use efficiency), Land care/land management; Financial sustainability; Landscape ecology; Aquatic ecosystems; Climate change; Solid waste management, and Regulatory strategies for risk assessment and environmental management.
Instruction	2 lectures and 1 practical per week, group discussions, presentations.
Assessment	Two major tests, one -3-hour examination, practical reports, assignments, presentations
Credits	8
Pre-requisite	None

YEAR 2- SECOND SEMESTER

AE221	FARM MECHANISATION
Objective	To provide students with practical skills and theoretical knowledge to design and perform the tillage, fertilizer application, spraying and harvesting operations.
Course Outline	Tractor performance; Draft power; Primary tillage and secondary tillage objectives and equipment; Planters and seed drills calibration and operations; Crop spraying, Harvesting;Animal traction.
Instruction	3 lectures and 1 practical per week (hitching implements; setting of implements during operation; carryout field operations with use of primary and secondary implements; Planter calibration, sowing and transplant seedlings; operate, calibrate, and apply routine maintenance and routine servicing plan procedures; harvesting operations (maize;Lucerne, potatoes); Animal traction field operations); Group work, Excursions
Assessment	2 major tests, one- 3-hour examination, practical reports; and assignments
Credits	12
Pre-requisite	AE111

CS221	AGRO-PROCESSING
Objective	To provide students with knowledge in principles and practices commonly employed in processing of crops and kills to perform basic preservation of methods
Course Outline	Introduction to agro-processing industry (industry sectors; industry standard classification, fruit and vegetable global value chain); Grains (morphology & structure; chemical composition; post-harvest handling system, storage; milling); Vegetables and fruits (chemical composition; flavor, sensory and nutritional quality; microbiology in fresh and processed products); Post-harvest handling and preservation technologies (storage systems; freezing, conventional thermal processing; dehydration, minimal processing; juices and blends); Food packaging, labeling, food additives; Food safety and regulations; New food product development process; Process waste management.
Instruction	3 lectures/week, 1 practical/week (thermal processing; dehydration, chemical preservation methods); visits to processing industries, sensory evaluation)
Assessment	2 major tests, one- 3-hour examination, 2 assignments/practical reports
Credits	10
Pre-requisite	HS 211

CS222	FIELD CROP PRODUCTION
Objective	To introduce students to agronomy as an integrated science and the production of field crops such as wheat, barley, oats, lucerne, sugarcane, cotton, cannabis, and major summer field crops such as maize, sorghum, soybeans, dry beans, sunflower, potatoes and cowpea and their basic principles of crop improvement
Course Outline	Morphology, physiology, management practices and basic principles of crop improvement of wheat, barley, oats and lucerne major summer field crops such as maize, sorghum, soybeans, dry beans, sunflower, potatoes, and cowpea.
Instruction	3 lectures/week; 1 practical/week (identification of pests and diseases and nutrient deficiency symptoms) field visits to farms
Assessment	Two major tests, one- 3-hour examination, practical reports/projects evaluation, 2assignments
Credits	12
Pre-requisite	CS 112

HS221	LANDSCAPE AND ORNAMENTAL HORTICULTURE
Objectives	To Introduce students to landscaping, characteristics and cultivation requirements of ornamental plants, marketing practices and procedures of bedding plants.
Course Outline	Ornamental horticulture and turf grass utilization: Classification of ornamental plants; Flowering plant reproductive cycle; Nursery management and production; Controlled environment cultivation practices of ornamental plants; garden pests and diseases and weed control; Turf grass identification and construction of turf grass facilities; Development of a garden maintenance programme; Treatments of florist material; Marketing of bedding plants. Landscaping: Principles of landscaping; landscape designing, functional and visual uses of plants in the landscape; Principles and operations of the basic power units applicable to horticulture; Garden plans
Instruction	3 lectures/week, presentations (case studies of past and present entrepreneurs); practicals (identification of ornamental plants, propagation, post-harvest handling, gardenplan and client assessment)
Assessment	3 hours exam, 2 tests, 2 assignments and practical reports
Credits	10
Pre-requisite	None

FC221	LAND USE PLANNING AND MANAGEMENT
Objective	To give students systemic thinking in resource allocation, planning and management of land-use and planning issues and the way they intersect with environmental, socio-culturaland economic challenges.
Course Outline	Definition of Land Use Planning; Introduction to natural resources; Overview of the planning process; Steps taken in Land use planning; Role of extension in land use planning; Key role players in land use planning; land evaluation; Capability and land suitability classification.
Instruction	3 lectures/week, 1 practical/week (land suitability assessments); group work
Assessment	3-hour exam, Two tests, two assignments/ practical reports; presentations
Credits Pre-requisite	10 SS121/SS122/SS211

FC222	AGRICULTURAL PROJECT
Objective	To implement a business plan and market an agricultural product. The emphasis is less on experimental projects and more on production orientation. To demonstrate orally and in writing an understanding of basic production/research, experimental/production project development, implementation.
Course Outline	Implementing a project, setting project objectives, generating a literature review, project layout, on- farm, laboratory and field experiments, project results presentation, interpretation of results, generating income, conclusion, and recommendations.
Instruction	Students are required to carry out a project with an experimental and production focus.
Assessment	An onsite evaluation of the project, and final report with experimental, production and financial sections.
Credits Pre-requisite	10 None

YEAR 3: FIRST SEMESTER

WC311	WORK-INTEGRATED LEARNING
Objective	To expose students to the realities of the working environment while enhancing theiremployability.
Course Outline	Administration (basic office skills & personnel management), subject matter specific responsibilities, (management practices of crops and agro–processing firms: and any other tasks relevant to the placement.
Instruction	6 months in a working place (farm/ office/ industry/ organization etc.) with relevantexperience in crop production.
Assessment	Monthly progress reports; On site evaluation (assessment by the work supervisor and lecturers' assessment visits), WIL final report, oral presentation.
Credits	60
Pre-requisites	Only TWO failed courses outstanding

YEAR 3: SECOND SEMESTER

WC321	WORK-INTEGRATED LEARNING
Objective	To expose students to the realities of the working environment while enhancing theiremployability.
Course Outline	Administration (basic office skills & personnel management), subject matter specific responsibilities (management practices of crop, animal production and agro – processing firms and any other tasks relevant to the placement.
Instruction	6 months in a working place (farm/ office/ industry/ organization etc.) with relevantexperience in crop production.
Assessment	Monthly progress reports; On site evaluation (supervisor & mentor), WIL final report, oralpresentation.
Credits	60
Pre-requisites	WC 311

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

AGRICULTURAL ENGINEERING

Semester 1: Compulsory Courses/Modules				
1	Engineering Physics	AE115		8
2	Engineering Mathematics I	AE114		12
3	Introduction to Crop Production	CS111		8
4	Technical Communication Skills	AE112		8
5	Introduction to Animal Production	AS111		8
6	Introduction to Computer Science	AE113		8
7	Engineering Economics & Accountancy	AB112		8
Subtotal				60
Semester 2: Compulsory Courses/Modules				
9	Introduction to Engineering Materials	AE125		10
10	Workshop Practice	AE127		10
11	Engineering Mathematics II	AE122	AE114	12
12	Engineering Chemistry	AE126		10
13	Engineering Drawing	AE128		10
14	Geographic Information System & Remote Sensing	AE123		8
15	Introduction to Soil Science	SS121		8
Subtotal				68
Total credits				128
Semester 3: Compulsory Courses/Modules				
16	Water Resources Engineering	AE211		10
17	Fluid Hydraulics	AE212	AE 115	12
18	Introduction to Statistics	AE213		12
19	Land Surveying	AE214	AE 123	10
20	Environmental Engineering	AE216	AE 126 SS 121	8
21	Farm Power & Machinery	AE217		12
22	Electrical Power & Instrumentation	AE 222	AE115	10
Subtotal				74
Semester 4: Compulsory Courses/Modules				
23	Environmental control for Agricultural Structures	AE 221	AE115 AE 126	10
24	Sustainable Energy	AE 222	AE 115	10
26	Agricultural Extension	AX122	None	8
27	Soil & Water Conservation Engineering	AE 224	SS121 & AE212	12
28	Farm Mechanisation	AE 225	AE212 AE 216	12
	Computer Science Applications	AE226	None	10
Subtotal				62
Total credits				**136**

Semester 5: Compulsory Courses/Modules					
	29	Irrigation & Drainage Engineering	AE 311	AE212	12
	30	Farm structure	AE 215	AE125	12
	31	Food Process Engineering	AE 313	AE124	12
	32	Agricultural Systems Automation	AE 314	AE222	12
	33	Engineering Entrepreneurship & Management	AE315	AB122	10
	34	Engineering Project	AE316	Sem I-IV	16
	Subtotal				74
Semester 6: Compulsory Courses/Modules					
	35	Work Integrated Learning	AE321	Sem I-V	30
	Subtotal				30
	Total credits				104
	Grand total				368

YEAR 1-FIRST SEMESTER

AE115	**ENGINEERING MATHEMATICS I**
Objectives	• To develop basic Mathematical skills for Engineering students that are imperative for effective understanding of Engineering subjects. • To provide basic tools for specialized studies in many Engineering fields.
Course Outline	This course will cover the following main sections: Introduction to Calculus, Derivatives and their applications, the Chain Rule, Exponentials and Logarithms and Vector Calculus
Instruction	3 lectures/week; Tutorials
Assessment	3 hours examination, two tests; two Assignments and/or tutorials
Credits	12
Pre-requisite	None

AE114	**ENGINEERING PHYSICS**
Objectives	The main purpose of this course is to offer an overview of basic physics principles. To apply the knowledge of physics principles to solve relevant practical and conceptual problems.
Course Outline	This course will cover the following broad categories: • Classical Mechanics, which deals with the motion of bodies under the action of forces. This is often called Newtonian mechanics as well. • Thermal Physics, in which one studies the nature of heat and the changes that the addition of heat brings about in matter. • Light and Optics • Vibration and waves • Optical Instruments And an appreciation of their importance in the study of physics; to introduce the mathematical tools used in their analysis.
Instruction	3 lectures/week; 1 practical /week (chemistry and physics laboratory experiments)
Assessment	2 tests, 2 practical/assignment, one-3-hour examination, presentations
Credits	8
Pre-requisite	None

AE 112	TECHNICAL COMMUNICATION SKILLS
	• To enable students to understand the conceptual framework of communication • To demonstrate understanding of generic fundamentals of communication • To explain the importance of effective communication to students and impart knowledge on effective communication techniques • To acquire practical communication skills • To apply key communication principles, theories and concepts to realize effective interpersonal and academic communication
Course Outline	Introduction to communication- Definition, objective of communication, importance of effective communication, barriers to effective communication, how to overcome barriers to effective communication; types and forms of communication- internal and external communication, formal and informal communication, vertical and horizontal communication; nature of communication in organizations- electronic communication, face to face communication, written communication, non- verbal communication; planning for communication- principles of communication, basic writing principles, theories and concepts for effective communication, planning for communication; written communication- formal letters, business reports, memos; verbal communication- public presentations, speech, meetings, interviews; listening skills- definition, listening process, barriers to effective listening, how to overcome the barriers to effective listening.
Instruction	3 lectures/week, 1 practical/week (article summaries, paper writing, presentations)
Assessment	2 Assignments, 2 Tests, one-3-hour examination, presentations
Credits	8
Pre-requisite	None

AE 113	INTRODUCTION TO COMPUTER SCIENCE
Objectives	This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications.
Course Outline	Computers, Devices and the Web- Introduction to Computers, Mobile Devices, Data and Information, the Web, Digital Security and privacy, Programs and Apps, Communication and Network, Technology Uses; Connecting and Communicating Online- The Internet, Connecting to the Internet, The World Wide Web, Types of Websites, Digital Media on the Web, Other Internet Services; Digital Security, Ethics and Privacy- Digital Security Risks, Internet and Network Attacks, Software Theft, Information Theft, Backing Up, Wireless security, Ethics and Society, Information Privacy; Windows and Office- Windows File Management, Microsoft Word, Microsoft PowerPoint, Microsoft Excel, Microsoft Access
Instruction	3 lectures/week; 1 practical/week (presentation slides; document formatting; presentations citations; article summaries)
Assessment	2 tests, 2 practical/assignments; one-3-hour practical examination
Credits	8
Pre-requisite	None

AB 112	ENGINEERING ECONOMICS AND ACCOUNTING
Objective	Engineering Economics is the process of making rational and intelligent decisions associated with the allocation of scarce resources in circumstances in which alternatives can be enumerated. This course provides students with skills to assess the cost and benefits of engineering investments, such as product and technology development programs and capital purchases. It also presents the framework for selecting among alternatives designs, for managing technologies over their life cycles, and for evaluating the finances of new ventures/projects.
Course Outline	What economics is all about- what is economics, scarcity, choice and opportunity cost, illustrating scarcity, choice and opportunity cost using production possibility curve, microeconomics and macroeconomics; Economic systems- different economics, traditional system, command system, market system, mixed system, South Africa's mixed economy; production, income and spending in the mixed economy- production, income and spending, sources of production: the factors of production, sources of income: the remuneration of the factors of production, sources of spending: the four ; demand, supply and prices- demand and supply: introductory overview, demand, supply, market equilibrium, consumer surplus and producer surplus; theory of money- meaning of money, types of money, functions of money measuring, performance and position- purpose and use of records, asset valuation, balance sheet and its analysis, income statement and its analysis, cash flow analysis, farm Accounting System, farm Financial Statements Analysis, farm Business Analysis, individual enterprises analysis; project planning and appraisal, project planning, project cycle, Net present value, internal Rate of Return, payback period.
Instruction	3 lectures/week; Tutorials
Assessment	2 Practical reports/Assignments, 2 Tests, one-3-hour examination, presentations,
Credits	8
Pre-requisite	None

AS 111	INTRODUCTION OF ANIMAL PRODUCTION
Objective	This course is designed to provide the student with the relevant knowledge of animal production concepts and practices. It is an overview of genetics, nutrition, reproduction, and management of livestock.
Course Outline	Introduction- animal contributions to humans, organism classification and names Animal Terms and Their Proper Usage); Domestication of animals (reasons for domestication, benefits of animal domestication, order in which animals were domesticated); Adaptation of Animals to different environments (environmental adaptation of various livestock species and breeds, physical adaptations, behavioral adaptations); Animal production systems (extensive versus Intensive , definition of extensive and intensive livestock production systems, comparison of extensive and intensive production systems); Beef production (the beef industry in South Africa, extensive and intensive production systems, communal and commercial production systems, beef breeds and their classification Important beef management activities); Dairy production (the dairy industry in South Africa' dairy production systems, dairy breeds, important dairy management activities); Sheep production (sheep production systems in South Africa, classification of sheep breeds, wool production, geographical distribution of sheep breeds in South Africa, important sheep management activities); Goat production (goat production in South Africa, fiber producing breeds, milk producing breeds, indigenous goat breeds, important goat management activities); Pig production (the Pork Industry in South Africa, pig breeds, important Pig management activities); Poultry production (the poultry industry in South Africa (Broiler, Layers), breeds or types of Chicken, broiler production management, layer production management); Fundamentals of Animal nutrition (livestock feeds, components of feed raw materials: water, carbohydrates (functions, structure, classification), proteins (functions, Structure, classification, essential and non-essential amino acids), lipids (functions, structure, classification, fatty acids), Vitamins & Minerals (grouping, functions, deficiency symptoms, toxicities)
Instruction	3 lecture/week, practical arranged
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	8
Pre-requisite	None

CS 111	INTRODUCTION TO CROP PRODUCTION
Objective	To introduce students to the basic principles of Crop Production, as an understanding these forms the foundation for crop production practices and are also basic to other formsof agriculture.
Course Outline	Introduction to Agro-meteorology, Origin, classification and nomenclature of economic crops, Plant physiology: germination, and seed quality, crop yield, plant growth and development, mineral nutrition, plant propagation and allelopathy.
Instruction	2 lectures and 1 practical per week (identification of different crop seeds, fertilizers,herbicides, and pesticides).
Assessment	2 Assignments, 2 Tests, one-3-hour examination, presentations
Credits	8
Pre-requisite	None

YEAR 1: SECOND SEMESTER

AE 125	INTRODUCTION TO ENGINEERING MATERIALS
Objective	• To help students acquire a fundamental understanding of engineering materials such as metals, ceramics, polymers and composites • To provide students with knowledge and skills on how to identify and use these principles in engineering analyses/design problems and acquire the principles that govern the microstructure and the mechanical properties of these materials. • To help students understand fundamental concepts governing the microstructure of engineering materials and thereby relate the learnt principles to materials resulting in physical properties.
Course Outline	Introduction to Engineering Materials- Materials Science and Engineering, Classification of Materials, Processing / Structure / Properties / Performance; Atomic Structure and Interatomic Bonding- Atomic Structure, Atomic Bonding in Solids (Bonding forces and energies, Primary Interatomic Bonds, Secondary Bonding, Materials of Importance); Mechanical Properties of Metals- Concepts of Stress and Strain, Elastic Deformation (Stress-Strain Behaviour, Elastic Properties of Materials), Plastic Deformation (Tensile Properties, True stress and Strain, Elastic Recovery after Plastic Deformation, Compressive, Shear and Torsional Deformations, Hardness), Property Variability and Design/Safety Factors (Variability of Material Properties, Design/Safety Factors); Phase Diagrams- Definitions and Basic Concepts, Phases and Microstructure, Binary Isomorphous System (Complete solid solubility), Binary eutectic Systems (Limited solid solubility), Binary Systems with Intermediate Phases/Compounds, The Iron-Carbon System
Instruction	3 lectures/week; 1 practical/week
Assessment	Two major tests, one-3- hour examination, practical reports, assignments
Credits	10
Pre-requisite	None

AE 127	WORKSHOP PRACTICE
Objective	To help the students to be conversant with the workshop hazards and to observe all safety practices and codes. To introduce students to the practical aspects of cutting and non-cutting processes such as engineering materials, welding, heat treatment, turning, shaping, planning, broaching, drilling, scraping, reaming, grinding, milling, bench work and fitting, woodwork, and carpentry, among others.
Course Outline	The course will help the students to be conversant with the workshop hazard and to observe all safety practices and codes. It cuts across all sections and departments of Mechanical Engineering workshops. Topics to be covered include introduction to basic manufacturing processes, organization of workshop, workshop hazard and safety practices and codes, properties of engineering materials, bench-work and fitting, introduction to turning exercises (straight and step turning chamfering, screw cutting), milling and milling exercise, drilling techniques and exercise, sheet metal work, welding, and soldering technique with exercises. Others are properties of wood, woodwork and joinery exercises, workshop measurements
Instruction	3 Lectures/ week, tutorials
Assessment	Two major tests, one- 3-hour examination, assignments
Credits	10
Pre-requisite	None

AE 128	ENGINEERING DRAWING (CAD2D) AND ESTIMATIONS
Objective	To provide students with basic information and skills to be able to read and understand drawings as a language for engineering communication. To explain the fundamental principles of projection and drawing practice. This includes drawing plans, elevations and sectional elevations of different parts of residential and farm building as well as components of farm machinery.
Course Outline	Introduction to engineering drawing, basic 2D and 3D geometrical constructions, orthographic projections including hidden detail, auxiliary views dimensioning & lettering, tolerance, sectioning of solids, isometric projections, drawing free hand sketches, working with drawing aids, model space viewports, paper space viewports and layouts, hatching drawing, blocks, technical drawing with AutoCAD, getting started with 3D using Autodesk Inventor modeling software, creating parts and assemblies.
Instruction	3 lectures/ week, tutorial
Assessment	Two major tests, one 3-hour examination paper, and assignments
Credits	10
Pre-requisite	None

AE 122	ENGINEERING MATHEMATICS II
Objective	The course is aimed at further developing the basic Mathematical skills for Engineering students that are imperative for effective understanding of Engineering subjects. The topics introduced will serve as basic tools for specialized studies in many Engineering fields. This course will cover the following main sections: Integration and its applications, Vectors and Matrices.
Course Outline	Integrals- the idea of the Integrals, Antiderivatives, Summation vs Integration, Indefinite Integrals and Substitution, The definite Integral, Properties of the Integral and the Average Value, Numerical Integration, Rates of Changes. Vectors And Matrices- Vectors and Dot Products, Planes and Projections, Cross Product and Determinants, Matrices and Linear Equations
Instruction	3 lectures, 1 tutorial
Assessment	2 major tests, one- 3-hour examination, assignments,
Credits	12
Pre-requisite	AE114

AE 123	GIS AND REMOTE SENSING
Objective	For students to understand the basic principles of spatial phenomena and fundamentals of GIS. Develop knowledge on how to capture, import, analyze and present GIS and RS data. Develop relevant knowledge of GIS and RS database management. Develop the capacity to understand opportunities and constraints related to GIS. Develop skills to work in a multidisciplinary manner, including integration of quantitative and qualitative methods. Transfer skills on the use of some of the most common software i.e. open-source QuantumGIS (QGIS) software.
Course Outline	Definitions; GIS components (hardware, software, data, people, and methods), characteristics and sources of GIS and RS data; GIS and RS data capture; Geodatabases and GIS data management; GIS analysis functions; Application of GIS and RS, especially in agriculture and environmental management. Setting up a GIS and RS installation; the National Spatial Data Infrastructure (NSDI) concept.
Instruction	3 lectures, tutorial and practical per week
Assessment	2 major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	8
Pre-requisite	None

AE 126	ENGINEERING CHEMISTRY
Objective	To present the fundamental principles of chemistry with particular reference to: Acid-Base and Redox chemistry. Electronic Structure of Atoms and Molecules. Properties of Liquids, Gases, Solids and their Solutions. Phase Changes. The associated laboratory exercises emphasize proper experimental techniques, data collection and analysis, safety and technical writing skills.
Course Outline	Atomic Structure; Atomic theory, Atomic structure and Symbolism, Chemical Formulas, The Periodic Table, Molecular and Ionic Compounds. Chemical Bonding and Molecular Geometry; Ionic Bonding, Covalent Bonding, Lewis's symbol and Structures, Strengths of Ionic and Covalent Bonds. Gasses, Liquids and Solids; Gas Pressure, The Ideal Gas Law, Non-Ideal Gas Behaviour, Intermolecular forces, Properties of Liquids, phase Transitions, Phase Diagrams, The Solid State of Matter, Lattice Structures in Crystalline Solids. Acid-Base Equilibria; Bronsted-Lowry Acids and Bases, pH and pOH, Relative strengths of Acids and Bases, Hydrolysis of Salt Solutions, Buffers, Titrations.
Instruction	3 lectures & 1 practical/week; group work; tutorials
Assessment	Assignments/practical report; 2 major tests, one-3-hour examination
Credits	10
Pre-requisite	None

SS 121	INTRODUCTION TO SOIL SCIENCE
Objectives	• Give students a general background on the origin of soils, the soil farming factors and processes. • Describe soil properties and how they influence soil behaviour • Explain the concept of chemical reactions and how they influence nutrient availability • Provide information on the type of soils we have globally and how the national and international classification systems are used to describe soil forms and families.
Course Outline	Introduction (definition, composition and functions); Rocks and minerals; Weathering processes; Soil forming factors; Soil forming processes (pedogenic processes), Soil profile (master horizon), Volume and mass relations; Soil colour, soil structure, soil texture, soil colloids; Types of colloids and their properties; Development of a surface charge; Flocculation and dispersion; Cation exchange capacity; Soil pH (acidity and alkalinity), soil pH and nutrient availability; Liming requirement; Soil organic matter; Types and sources of fertilizers, fertilizer application methods; Soil classification systems (South Africa, USDA and WRB classification systems); An introduction to soil mapping.
Instruction	3 lectures/week 1 Practical per week
Assessment	Practical reports, 2 tests, 2 assignments and 1 examination (1 x 3hr paper)
Credits	8
Pre-requisite	None

YEAR 2- FIRST SEMESTER

AE 211	WATER RESOURCE ENGINEERING
Objective	To introduce students to concepts of the basic techniques of hydrological analysis and design of water reticulation system
Course Outline	Hydrology – definition, hydrologic cycle and its components, forms and types of formation of precipitation Characteristics of rainfall in South Africa; Probability analysis of rainfall – Return period' Runoff – Definition – Components of runoff; Runoff characteristics of streams perennial intermittent and ephemeral streams, measurement of stream flows, catchment characteristics- Measures of stage and velocities; Hydrographs – Definition and components; Unit hydrograph – Concept definition and the basic assumptions; Application of Hydrology – flood control, regulation and mitigate land and water; management, watershed management; Watershed - identification and delineated Physiographic characteristics of watershed.
Instruction	3 lectures/ week, tutorials
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	10
Pre-requisite	None

AE 212	FLUID HYDRAULICS
Objective	To enable students to understand the design principles of efficient water conveyance systems such canal, channels, and pipes
Course Outline	Fluid – definitions, classification, properties, dimensions; Fluid Pressure-Introduction, measurement of fluid pressure, piezometer tube, manometry types of manometers; Mechanical Gauges-Bourdon's Tube - pressure gauge, diaphragm pressure gauge, dead weight pressure gauge, Kinematics of fluid flow-introduction-continuity of fluid flow – Types of flow lines, Dynamics of fluid flow- Various forms of energy in fluid flow, frictional loss, general equation, Bemoulli's theorem, Euler's equation of motion; Flow through orifices (Measurement of Discharge) – Types of orifices, Jet of water, vena, Hydraulic coefficients; Flow through mouth pieces - Types of Mouthpieces - Loss of Head of a liquid flowing in a pipe, Discharge through a Mouthpiece; Flow through simple pipes - Loss of head in pipes, Darcy's formula for loss of Head in pipes, Chezy's formula for loss of head in pipes
Instruction	3 lectures/ week, tutorials
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	12
Pre-requisite	None

AE 213	INTRODUCTION TO STATISTICS
Objective	This course is designed to provide students with basic statistics. The course covers descriptive statistics with concepts of dispersion, central tendency measurements. Graphical and tabular displays are also covered. Simple linear regression and correlations are introduced.
Course Outline	Introduction to statistics; Basic Concepts, Fields of Statistics, Steps in a Statistical Inquiry. Data collection methods with graphical representations; Measurement, Data Collection Methods, The Questionnaire, The Philippine Statistical System. Measures of central tendency; Summation, The Arithmetic Mean, The Median, The Mode. Measures of dispersions; Range, The Variance and the Standard Deviation, The Coefficient of Variation. Simple Linear Regression and Correlations; Correlation Analysis, Simple Linear Regression Analysis, Estimation Using the Method of Least Squares.
Instruction	3 lectures, 1 tutorial and practical per week; group work
Assessment	2 major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	12
Pre-requisite	None

AE 214	LAND SURVEYING
Objective	To provide students with an ability to plan and carry out a survey of any mapping and/or engineering project, and to select the right methodology, equipment, and software to facilitate processing and presentation of the survey results in an appropriate and easy to understand format. To introduce students to the concepts of observing, recording, reduction and presentation of survey measurements and their applications in engineering projects and to highlight the importance of recognizing land ownership when executing engineering projects.
Course Outline	Introduction- What is Surveying, Land Surveying and Engineering Surveying, Coordinate System, Scale and Units, Surveying Computations; Levelling- Level and horizontal Lines, Datums and Benchmarks, Automatic Levels, Surveying instruments, Principles of Levelling, Field Procedure, Booking and Reduced Level Calculations, Precision of Levelling, Errors in Levelling, Levelling Methods, Applications of leveling; Measurements And Error- Types of Error, Least Squares Estimation and Most probable Value, Standard Deviation and Standard Error, Redundancy, Survey Specifications; Control Surveys- types of Traverse, Traverse Specifications and Accuracy, Fieldwork (Angular and Distance Measurements), Three-Tripod Traversing, Triangulation and Trilateration, Network Configurations, Intersection and Resection; Satellite Position Fixing System- GPS Space, Control and User segment, GPS positioning Methods, GPS Instruments, Applications of GPS.
Instruction	3 lectures/ week, tutorials
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	10
Pre-requisite	None

AE 216	ENVIRONMENTAL ENGINEERING
Objective	To acquire an understanding of aspects of environmental considerations that are required for maintaining environments effectively. To impart knowledge to students on different types of pollution that leads to environmental pollution. To introduce students to the integrated science, engineering, design and management concepts of engineered environmental systems.
Course Outline	Environmental Science and Engineering – Definition, History; Environmental Regulations and Standards – NEMA, EIA Process; Environmental Parameters – Mass, Concentration Units, Partial Pressure Units, Volume/Mole Units, Concentrations in Air and Water; Water Quality Management – Water Resources and Water Quality, Water Usage, Water Distribution, Water Pollution; Water and Wastewater Treatment – Characteristics of Untreated Water, Water Quality Standards, Overview of Water Treatment Processes, Overview of Domestic Wastewater, Overview of Wastewater Treatment Process, Natural Treatment Systems; Air Pollution and Control; Low-Cost Sanitation System – Septic Tank Design
Instruction	3 lectures/week, 1 practical/week
Assessment	2 major tests, one- 3-hour examination, 2 assignments/practical reports
Credits	8
Pre-requisite	AE 126 & SS 121

AE 217	FARM POWER AND MACHINERY
Objective	To enable students to understand the utilization of conventional energy resources for farmmachinery.
Course Outline	Farm power sources; Principles of IC Engine, Air Intake System, Fuel System in Diesel Engine, Cooling and Lubrication; IC Engine Testing- Exhaust smoke analysis and Pollution Control; Hitches and hitch systems-Operations and maintenance of farm machinery Field evaluation and cost analysis of agricultural machines, Criteria for replacementproperties,
Instruction	3 Lectures /week, 1 Practical/week, tutorials
Assessment	Two tests, practical reports, two assignments and one presented research work, One-3-hourexamination
Credits	12
Pre-requisite	None

AE 222	ELECTRICAL POWER AND INSTRUMENTATION
Objective	To enable students to understand the basic electrical principles such as current, voltage, insulator, conductor etc.; Kirchhoff's law; Motor and generator; Alternating current and transformer; House wiring. To enable students to apply knowledge of semiconductors & transistors. To enable students to understand digital electronics correlated to Microprocessors.
Course Outline	Insulators and conductors, voltage, current, resistance, inductance, capacitance, Ohm's law, series & parallel combination; DC network DC network: Kirchhoff's Law, Wheatstone bridge; Generator & motor: Faraday's laws of electromagnetic induction, Flemings right hand and left hand rule, D.C. generator and motor, AC motor, sine wave, VFD Power Sources, Selection and sizing of motors for most applications; AC fundamental: Basic terms-cycle, amplitude, time period, frequency, equation of alternating voltage and current, RMS, average value, instantaneous value, peak factor, form factor, simple problem; AC circuit R- L-C series circuit: AC through resistance, capacitance, inductance and their combinations, expression for impedance, reactance, current, power factor, simple problem. Transformer: Transformer Construction, operating principle, types and uses; House wiring: methods of house wiring, Safety and precautions measures against electrical hazard; Semiconductor: Energy band diagram, intrinsic and extrinsic semiconductor, doping, P-type, N-type semiconductor, PN junction diode, forward and reverse biased diode, diode characteristics, Full-Wave rectifier. Transistor: Physical construction of bipolar PNP and NPN transistor, biasing circuit configuration (CE, CB, CC), Elementary ideas of display - LED, LCD, seven segment display. Digital Logic circuits: Basic logic gates, binary algebra operations, Boolean algebra, truth tables, simple logic circuit designs, combinational and sequential logic circuits
Instruction	3 lectures per week, tutorials
Assessment	2 major tests, one- 3-hour examination, practical reports; and assignments
Credits	12
Pre-requisite	AE 125

YEAR 2- SECOND SEMESTER

AE 221	ENVIRONMENTAL CONTROL FOR AGRICULTURAL STRUCTURES
Objective	To enable students to understand the environmental requirements for livestock and plants and learn the important environmental parameters in agricultural structures so that they will be able to apply engineering sciences to analyse and solve problems in environmental control. The students will learn and understand the principles of heating, cooling, ventilating and air-conditioning equipment and systems. The candidate will understand basic environmental engineering principles such as psychometrics, heat and mass movement as found in agricultural buildings, and plant and animal interactions with the environment.
Course Outline	Introduction to heat and mass movement, moist air properties (psychrometric). Source and use of weather data in environment control analysis. Analysis of thermal energy and mass balance in a greenhouse, poultry, dairy, and farm produce storage and agro-processing structures/buildings. Mixed, natural and mechanical ventilation systems. Fans, air inlets and distribution in agricultural buildings. Environmental control in a greenhouse, poultry, dairy, and farm produces storage and agro-processing structures. Environmental control and systems.
Instruction	2 lectures and 1 practical per week, group discussions, presentations.
Assessment	Two major tests, one -3-hour examination, practical reports, assignments, presentations
Credits	10
Pre-requisite	AE 124

AE 221	SUSTAINABLE ENERGY
Objective	The course aims to introduce a general engineering/science audience to the basic concepts of renewable energy. Students are introduced to different types of renewable energy resources by engaging in various activities to help them understand the transformation of energy (solar, water, nuclear, biomass and wind) into electricity. Students explore the different roles engineers who work in renewable energy fields have in creating a sustainable environment – an environment that contributes to greater health, happiness and safety.
Course Outline	Solar energy: Sun-Earth relationship, Extra-terrestrial, global, direct, diffuse radiation, Flat plate collectors, heat transfer, transmission through glass, absorption transmission of sun energy, selective surfaces, performance, and efficiency, PV systems, (components-modules, arrays, controllers, inverters, storage), PV system sizing; Wind: Global distribution, resource assessment, wind speed, height and topographic effects, power extraction for wind energy conversion, wind mills, their types, capacity, properties, windmills for water lifting and power generation, environmental effects; Hydropower: Global resources, and their assessment, classification, micro, mini, small and large sources principles of energy conversion; turbines, their working and efficiency for micro to small power systems, environmental impact, Biogas: Biomass sources; residue, farms, forest, Solid wastes; agricultural, industrial and municipal wastes etc.; applications, traditional and non-traditional uses: utilization, process, gasification, digester, types, energy forming, Environment issues, biogas thermal energy and its conversion to other forms of energy. Biomass thermal energy production and conversion. Theory and practice of construction, maintenance and repair of solar, wind, hydropower and biogas systems
Instruction	3 lectures per week, tutorials
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	10
Pre-requisites	AE 125

AX 121	AGRICULTURAL EXTENSION
Objective	To develop students' understanding of the fundamental theories, systems, and practices that shape Agricultural Extension and its role in agricultural and rural development. To equip students with the knowledge and practical skills to apply participatory, communicative, and adult-learning approaches in agricultural extension practice
Course Outline	Concepts of Extension (Introduction to extension -definitions of agricultural extension, extension principles, roles of extension worker in agricultural development); History of extension (the origin of extension in different regions-developed & developing countries); Extension systems (types of extension systems – FSR/E; T&V); Applied adult learning theory (Characteristic of farmers, Learning principles related to characteristics of adults, conditions conducive for learning, Use of variety of teaching methods, improving effectiveness of farmers learning); Participatory rural appraisal and Methods, Guidelines for field participatory rural appraisal); Norms and Standards for extension and advisory service (Objectives of norms and standards, clients, guiding principles)
Instruction	3 lectures and 1 practical per week (meeting procedures, group discussions, public speaking, preparation of visual aids, farm visit planning, farm visits and analysis, presentations of farm findings, and case study analysis)
Assessment	Two major tests, one 3-hour examination paper, research reports, presentations, andassignments
Credits	10
Pre-requisites	None

AE 224	SOIL AND WATER CONSERVATION ENGINEERING
Objectives	This course covers factors resulting in soil erosion and degradation, provides biological and engineering control measures that can be implemented to conserve the soil and water resources. The aim is to provide students with information about basic principles of soil and water conservation, management strategies applied to reduce land degradation and water use efficiency.
Course Outline	Definition and Properties of Soil and Water- Nature of Soil, Rainfall and Water, Erosion process and problems, Forms of Erosion. Erosion and Its Control - Types of erosion, Erosivity and Erodibility, Control of water erosion. Soil Loss - Universal Soil Loss Equation (USLE), Wind erosion and its control. Influence of soil on erosion control - Soil capability classification and its use in erosion control. Desertification - Causes of desertification. Tillage erosion, Land Reclamation, Design of Soil and Water Conservation Structures (Gabion, Contours, earth dams, farm ponds)
Instruction	3 lectures/week, tutorials
Assessment	3 hours exam, 2 tests, 2 assignments and practical reports
Credits	12
Pre-requisite	AE 211

AE 225	WATER SUPPLY ENGINEERING
Objective	To enable students to plan for farm agriculture water supply.
Course Outline	Basics on agricultural water Planning and Estimating Components of Water Supply- Components of Water Supply System, Type of pumps; Pumping and Distribution- Components of pumps, Pump selection, Agriculture water quality and treatment, Agriculture wastewater sources Regulations for wastewater treatment (Guidelines on wastewater in Agriculture), Wastewater treatment for agriculture reuse
Instruction	3 lectures/week, tutorials
Assessment	3-hour exam, Two tests, two assignments/ practical reports; presentations
Credits	12
Pre-requisite	AE212

AE 226	COMPUTER SCIENCE APPLICATIONS
Objective	To Introduce students to programming basics (what it is and how it works), binary computation, problem-solving methods and algorithm development. Includes procedural and data abstractions, program design, debugging, testing, and documentation. Covers data types, control structures, functions, parameter passing, library functions, arrays, inheritance and object-oriented design. Laboratory exercises in Python.
Course Outline	Introduction; Relationship between computers and programs, Basic principles of computers, File systems, Using the Python interpreter, Introduction to binary computation, Input / Output. Data types and control structures; Operators (unary, arithmetic, etc.), Data types, variables, expressions, and statements, Assignment statements, Strings and string operations, Control Structures (loops and decision). Modularization and Classes; Standard modules, Packages, Defining Classes, Defining functions, Functions and arguments (signature). Exceptions and data structures; Data Structures (array, List, Dictionary), Error processing, Exception Raising and Handling. Object oriented design; Programming types, Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism.
Instruction	3 lectures/week, tutorials
Assessment	3-hour exam, Two tests, two assignments/ practical reports; presentations
Credits	8
Pre-requisite	AE 113

YEAR 3 FIRST SEMESTER

AE 311	IRRIGATION AND DRAINAGE ENGINEERING
Objective	To enable students to: Apply appropriate techniques and analyses to the effective design of bothirrigation and drainage systems. Design, test, and analyse agricultural irrigation and drainage systems and theircomponents.
Course Outline	Soil-Water-Plant-Atmosphere Relationship; Crop Water Requirement and Irrigation Scheduling; Types of irrigation systems: Advantages and disadvantages; Irrigation Water Conveyance and Measurement of Irrigation Water: pipes, fittings, valves and filter systems, emitters and water meters; Irrigation design (sprinkler, drip, flood): In-field system design, mainline and pump station design; Maintenance of irrigation systems; Performance Evaluation of Irrigation Systems: pressure measurement, discharge tests distribution uniformity tests for sprinkler systems, moving systems, micro irrigation; Drainage of Agricultural Lands, Surface field ditches; storm water drainage design; Management of Salt affected soils, Performance and Evaluation of Drainage Systems.
Instruction	3 lectures/ week, tutorials
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	12
Pre-requisite	AE 212

AE 215	FARM STRUCTURES
Objectives	To enable students to understand the theory and practices of designing and analysistechniques of farm structures. To impart knowledge on the principles of load analysis and stress analysis. The student will acquire knowledge and understanding of statically indeterminate and statically indeterminate structures. The student will acquire knowledge on the selection and use of steel, concrete, and timberin farm structures
Course Outline	Stress analysis; Statically determinate trusses; Bending deformation; Statically indeterminate Frames; Load analysis; Structural connections; Steel design in agriculture; Timber design in Agriculture; Concrete design in agriculture.
Instruction	3 lectures/week; tutorials
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	12
Pre-requisite	AE 125

AE 313	FOOD PROCESSING ENGINEERING
Objective	To impart to the student skills in understanding Food Engineering unit operations required to produce specific food, be able to mathematically describe input and output streams of various food unit operations and optimize unit operations in terms of their efficiency in processing. To transfer the underlying engineering principles of design and optimization of food machinery that are associated with each food engineering unit operations. To impart the student skills in understanding the procedures involved in the food product processing equipment, evaluate the performance of any food processing machine.
Course Outline	Characteristics of food raw materials. Fundamentals of food processing (dimensions, units and measurements, heat and mass transfer). Energy and mass balance analysis. Food sorting and grading, size reduction, filtration, expression, centrifugation, mixing food ingredients, blanching, pasteurization, sterilization, concentration/evaporation, drying, baking and roasting, frying, refrigeration and freezing. Microwave, infrared and irradiation technologies. Traditional food processing and preservation technologies. Principles of food plant design (plant layout, process charts, types and selection of processes).
Instruction	3 lectures/ week, tutorials
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	12
Pre-requisites	AE 115

AE 314	AGRICULTURAL SYSTEM AUTOMATION
Objectives	To introduce students to automated technology used in the agricultural industry. To introduce students to common industrial control equipment and practices for agriculture, and food production automation applications
Course Outline	Automatic Control Applied to Agricultural Systems- Modelling and Simulation of Agricultural System, Automatic Control of Dynamic System, Sequential Control of Process, Automatic Control of Agricultural System; Robotics Applied to Agriculture- Manipulation Robotics, Mobile Robotics, Machine Vision Applied to Agriculture, Agricultural Robots
Instruction	3 lectures/week; Tutorials
Assessment	3 hours examination, two tests; two Assignments and/or tutorials
Credits	12
Pre-requisite	AE 226

AE 315	ENGINEERING ENTREPRENEURSHIP AND MANAGEMENT
Objectives	To enable students to understand the principles of entrepreneurship, entrepreneurship development in the agriculture sector. To impart knowledge to students on how to commercialize Agro-technology innovation in farms, and postharvest handling in the whole product supply chain. The students learn and understand principles on how risk analysis is required as well as knowledge/skill that will be in entrepreneurship activities.
Course Outline	Concept of Entrepreneurship, creativity and innovation, developing the Entrepreneurship plan, ideas versus opportunities, commercialization of technology-based innovations. Technology usage and adoption by small and micro-enterprises, Promotion of technological development, Diffusion and mechanism of technology transfer, etc. Assessment and evaluation of entrepreneurial opportunities, Structuring the new venture, legal structures and issues, Sources and types of capital, Management team, Strategic planning, managing growth, financing growth. Definition of risk, Processes of risk management, Insurance of the small business.
Instruction	3 lectures/week; Tutorials, developing a business plan, appraisal of business opportunities, business compliance, business strategy managing growth and finance, business and project management develop project plan, project scheduling and execution plan. Project appraisal Techniques.
Assessment	3 hours examination, two tests; two Assignments and/or tutorials
Credits	8
Pre-requisite	AB 112

AE 316	ENGINEERING PROJECT
Objective	The students develop knowledge and understanding of the principles and processes of engineering problem identification. The student understands the processes of how to find solutions and solve the identified real-world engineering problems. The students develop skills on how to collaborate with stockholders and the industry in the process ofsolving engineering problems.
Course Outline	Unspecified agricultural industry related engineering projects that use the fundamental concepts of engineering design analysis, technical technician analysis and functional procedures of technical systems. Engineering project teams are selected consisting of two or more student members. Engineering project team formation, methods of agricultural engineering project identification, visualization and selection of different techniques or alternative methods as well as alternative. Methods of the evaluation and selection of the most appropriate project solutions from several possible options. Principles and practices of evaluation of best alternative solutions to identified options. Engineering contracts, administration of contracts. Management of construction plants, personnel and financial management. Estimating, Quantity Survey, Specifications. Project report (communication, writing and presentation). Analysis of a bill of quantities.
Credits	16
Pre-requisite	

AE 321	WORK INTEGRATED LEARNING
Objectives	Work Integrated Learning is to be arranged and undertaken by students at the end of semester 5 in fields relevant to Agricultural Engineering. A total of 12 weeks must be accumulated. A report on the work conducted is to be submitted to the department within one month of the conclusion of the work integrated learning period, together with a certificate of progress (Logbook) from the institution concerned, in which the actual period is also stated.
Credits	30
Pre-requisite	Sem 1-5

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

ANIMAL PRODUCTION

Courses		Course Code	Pre-requisite(s)	Credits
1	Introduction to Animal Production	AS111		8
2	Agricultural Biology	AF115		8
3	Applied Mathematics	AF113		8
4	Communication	AF111		8
5	Computer applications	AF114		8
6	Field Work Practical	FC113		12
7	Introduction to Agric. Economics	AB111		8
Total Semester 1 Credits				60
Courses		**Course Code**	**Pre-requisite(s)**	**Credits**
8	Animal Breeding and Genetics	AS121		10
9	Introduction to Pastures	PS121		10
10	Animal Anatomy & Physiology	AS122		10
11	Animal Nutrition	AS123	AF115	10
12	Animal Disease I	AH121	AF115	10
13	Agricultural Extension	AX121		10
Total Semester 2 Credits				60
Total Year 1 Credits				120
Courses		**Course Code**	**Pre-requisite(s)**	**Credits**
14	Farm Structures	AE211		12
15	Animal Disease II	AH211	AH121	10
16	Poultry Production	AS211	AS111	10
17	Pig Production	AS212	AS111	10
18	Rangeland & Cultivated Pasture Management	PS211	PS121	10
19	Business Management -	AB211	AB111	8
Courses		**Course Code**	**Pre-requisite**	**Credits**
20	Small stock Production	AS222	AS111	10
21	Dairy Production	AS223	AS111	10
22	Beef Production	AS224	AS111	10
23	Animal Food Products Processing	AS221		10
24	Agricultural project	FC222		10
25	Aquaculture	AQ221		10
Total Semester 4 Credits				60
Total Year 2 Credits				122
Courses		**Course Code**	**Pre-requisite**	**Credits**
26	Work Integrated Learning	WA311	Two failed courses outstanding	60
27	Work Integrated Learning	WA321	WA 311	60
Total Semester 5 and 6 Credits				120
Total Qualification Credits				360

YEAR 1: FIRST SEMESTER

AS111	INTRODUCTION TO ANIMAL PRODUCTION
Objectives	To introduce students to basic animal production concepts and practices.
Course Outline	Animal contribution to human needs, adaptation of animals to different environments, general housing requirements, animal production systems, (beef, dairy, sheep, goats, pigs, poultry), general features differentiating breeds, animal breeding, biotechnology in animal production, nutrition, animal welfare versus animal rights verses factory farming.
Instruction	3 Lectures/week; Practical – Identification of animal production systems (beef, dairy, small stock, poultry, piggery), different breeds under animal production systems, Feeds and feeding of different types of farm animals, basic breeding practices
Credits	8
Pre-requisite	None

AB111	INTRODUCTION TO AGRICULTURAL ECONOMICS
Objectives	To facilitate the learning process for the learners to : understand the basic economic problem of relative scarcity, understand the process of production, specialization and exchange, understand the principles of demand, supply and price determination, distinguish the effect on demand and supply of changes in various factors, and understand the basics ofproduction economics
Course Outline	Introduction to economic concepts, consumer equilibrium and market demand, measurement and interpretation of elasticities, introduction to production and resource use, economics of input and product substitution, market equilibrium and product price, product markets and national output, macroeconomic policy fundamentals
Instruction	Lectures Three lectures per weekPractical Exercise in determining agriculture's contribution to the economy
Assessment	Practical reports, Two tests, 2 assignments and examination (1 x 3hr paper)
Credits	8
Pre-requisite	None

AF114	COMPUTER APPLICATION
Objectives	To introduce students to the basic concepts of computer hardware and the use of softwarefor generation of reports.
Course Outline	Understanding Microsoft operating systems, Microsoft office applications including MS word, MS excel, MS PowerPoint and MS Access, understand the function of the various computer hardware including mouse, keyboard, CPU, monitors, and the use of internet search engines.
Instruction	2 lectures/week; Practical – conduct chemistry and physics laboratory experiments.
Assessment	2 tests; Practical/Assignment; Written and Practical Examination; Presentation
Credits	8
Pre-requisite	None

AF113	APPLIED MATHEMATICS
Objectives	The course aims to develop the capacity to perform mathematical operations and manipulations with confidence, speed and accuracy. It will further promote mathematical skills and knowledge necessary to develop proficiency in analytical reasoning, and utility in modeling situations and solving real world problems. Students should further acquire skills to logically question assertions, recognize patterns, and distinguish the essential and Irrelevant aspects of problems.
Course Outline	Mathematical basics; priorities and laws of operations, variables, fractions, powers and roots. Functions and representations of functions; linear equations in one variable, simultaneous linear equations in two variables, linear inequalities in one variable, systems of linear inequalities in two variables. Mathematical measurement; perimeter and area, volumes. Statistics and probability; definitions of statistical terms, frequency distributions, histograms, frequency polygon, cumulative frequency polygon, measures of central tendency, measures of dispersion.
Instruction	2 lectures/week; Tutorials
Assessment	Three-hour examination, Two tests; Two Assignments and/or practical reports.
Credits	8
Pre-requisite	None

AF 115	AGRICULTURAL BIOLOGY
Objective	To introduce students to the scientific methods and the different fields of life, sciences andAgriculture.
Course Outline	Principle of Taxonomy, the cell structure and function, tissue, organs and systems (plants, animals), chemistry of biological molecules, the flow of energy within organisms, Autotrophs and heterotrophs, overview of photosynthesis, overview of cellular respiration, DNA as a hereditary material, Genes and synthesis of polypeptides, Cellular reproduction (Mitosis and meiosis, Mendelian genetics, Population and community ecology, Ecosystems, Biomes and Biosphere, The diversity of plants, The morphology of flowering plants (Roots, Stems, Leaves, flowers, Inflorescence, fruits, seeds).
Instruction	3 lectures and 1 Practical/week (Identification and classification, Use of microscope, Microscopy, preparation of slides and types of tissues, Identification of plant organs and structure of flowering plants, mitosis and meiosis)
Assessment	2 tests, 2 assignments, practical tests/reports, Three-hour examination
Credits	8
Pre-requisite	None

AF113	COMMUNICATION
Objectives	To develop students' understanding of the principles, concepts, and theories of effective communication in technical and professional contexts. To equip students with oral communication and presentation skills for effective delivery of technical information. To enhance students' academic and professional writing skills for clear, logical, and well-organized technical communication.
Course Outline	**Communication Concepts and Theories** (Definition of communication; interpersonal communication process and models; Elements of communication; communication contexts; barriers and strategies to overcome communication barriers) **Small group communication** (Definition of a small group; Virtual group communication; group formation and conflict management strategies; group dynamics) **Oral presentation (**Oral presentation and public speaking: audience analysis: adapt the presentation to a variety of audiences) **Report Writing (**Different types of reports; systematic report-writing process; organizing reports logically; principles of graphic presentation**;** Report format for a specific purpose) **Academic Writing** (Stages of composing in the academic writing process; construct an appropriate topic, essay writing, citation, and references) **Meetings** (Meeting etiquette; Notice and agenda of the meeting; minutes taking; chairing of meeting strategies: office bearers and their duties)
Instruction	3 lectures/week; 1 Practical (Conflict management exercises; Oral presentations and public speaking practice session; prepare notice, agenda, and take minutes while performing different meeting roles, chairperson, secretary, etc.; Essay and report structure, referencing, and writing process; Construction and interpretation of graphics (tables, charts, diagrams) in technical reports)
Assessment	2 tests; Practical/Assignment; Examination; Presentation
Credits	8
Pre-requisite	None

FC 113	FIELDWORK PRACTICAL 1
Objective	To provide all first-year students with practical hands-on experience of on-farm activities to enable them to apply their theoretical knowledge practically.
Course Outline	All activities are done for successful establishment, growth and maturity of field crops, vegetables and fruit trees. Carrying out farm livestock management activities.
Instruction	Students will be required to engage in approved morning farm work of 3 hours for a minimum of 10 weeks and also work once a week for the whole day on the farm.
Assessment	Formative and summative assessments of participation in and outcomes from practical hands-on training activities, practical reports.
Credits	12
Pre-requisite	None

YEAR 1: SECOND SEMESTER

AS121	ANIMAL BREEDING AND GENETICS
Objective	This module contains fundamental knowledge, theories, principles, and practices of animal breeding. After completion of this course the student will be familiar with the basics of practical animal breeding; selection goals, objectives, and criteria, & techniques; mating systems; national livestock improvement schemes.
Course Outline	Principles of Mendelian genetics, monohybrid and dihybrid crosses, codominance, lethal genes and epistasis, Type of gene action at a single locus and at multiple loci, Sex related inheritance, gene and genotypic frequencies, the Hardy-Weinberg law, forces that change gene frequency, advantages and disadvantages of inbreeding, Breeding systems evaluation, importance of preserving genetic variation, Phenotypic and genetic correlations, heritability and repeatability, Natural selection; Factors that affect response to selection, use of genetic information as an aid to selection of breeding stock, objectives of crossbreeding, Rotational vs. terminal crossbreeding systems and their use
Instruction	3 lectures and 1 Practical/week (Students use breed records to select sire and dams for a pre- determined breeding programme).
Assessment	2 tests, 2 assignments, practical tests/reports, Three-hour examination.
Credits	10

AH 121	ANIMAL DISEASES 1
Objectives	To develop students' understanding of the pathogenesis of diseases caused by bacteria, viruses, protozoa, fungi and other pathogenic organisms and prevention and control thereof.
Course Outline	Introduction to bacterial, viral, protozoal and fungal diseases of importance to domestic animals in South Africa, general concepts of the taxonomy, identification, pathogenesis, clinical signs, epidemiology and control of these diseases, basic concepts of infectious diseases relating to the application and interpretation of laboratory diagnostic tests, and their control and eradication.
Instruction	3 lectures/week, 1 practical/week –laboratory identification of microorganisms causing diseases, identification of symptoms of diseases, interpretation of lab diagnostic test.
Assessment	3 hours exam, 2 tests, 2 assignments/practicals as outlined on instructions
Credits	10
Pre-requisite	AF112

PS 121	INTRODUCTION OF PASTURES
Objectives	To provide students with a theoretical understanding of interactions of many biotic and abiotic factors in natural and cultivated plant communities. To provide students with an understanding of key physiological and ecological principlesthat underpin pasture plant growth and development, reproduction, and nutrition.
Course Outline	Development of plant community concepts, species interactions (competition, allelopathy), growth and development of the grass plant, phases of development; annual and perennial grasses, tropical and temperate plants, the physiology of grasses; the structure of grasses, legumes and shrubs, growth habits of grasses, introduction to common pasture grasses, Identifying grasses and legumes, the importance of legumes in Pasture, nitrogen fixation in legumes, the rhizobium bacteria, common legumes, factors affecting native and cultivated pasture production, plant adaptations to the environment (Physiological adaptations, mutualism and symbiotic adaptations), biome classification, different types of biomes, veld types, primary succession, secondary succession, progressive succession, retrogressive succession, plant- herbivore interaction; plant water relations, ecosystems and nutrient Cycling
Instruction	3 lectures and 1 Practical/week (growing plants in pots at different densities; grass species identification; species distribution practical; soil sampling practical, chemical analysis of soil; soil moisture measurements)
Assessment	2 tests, 2 assignments, practical tests/reports, Three-hour examination
Credits	10
Pre-requisite	None

AX121	AGRICULTURAL EXTENSION
Objective	To develop students' understanding of the fundamental theories, systems, and practices that shape Agricultural Extension and its role in agricultural and rural development. To equip students with the knowledge and practical skills to apply participatory, communicative, and adult-learning approaches in agricultural extension practice
Course Outline	Concepts of Extension (Introduction to extension -definitions of agricultural extension, extension principles, roles of extension worker in agricultural development); History of extension (the origin of extension in different regions-developed & developing countries); Extension systems (types of extension systems – FSR/E; T&V); Applied adult learning theory (Characteristic of farmers, Learning principles related to characteristics of adults, conditions conducive for learning, Use of variety of teaching methods, improving effectiveness of farmers learning); Participatory rural appraisal and Methods, Guidelines for field participatory rural appraisal); Norms and Standards for extension and advisory service (Objectives of norms and standards, clients, guiding principles)
Instruction	3 lectures and 1 practical per week (meeting procedures, group discussions, public speaking, preparation of visual aids, farm visit planning, farm visits and analysis, presentations of farm findings, and case study analysis)
Assessment	Two major tests, one 3-hour examination paper, research reports, presentations, and assignments
Credits	10
Pre-requisite	None

AS 123	ANIMAL NUTRITION
Objectives	To enable students to apply the principles of animal nutrition in livestock feeding practices.
Course Outline	Non-ruminant digestion and absorption; ruminant digestion and absorption; evaluation of energy in livestock feeds; nutritional requirements for maintenance and production; nutrient metabolism; feed additives and supplements; feed preparation and processing;feed laws and labeling; ration formulation and balancing.
Instruction	3 lectures per week, Feed manufacturing company visits, feed intake trial at the Institute, identify samples of various concentrates, roughages, forages, and feed supplements commonly used in South Africa. Computation of balanced rations for individual animals is practical.
Assessment	3 hours exam, 2 tests, 2 practicals as outlined in the instruction, assignments and one presented research work, One exam
Credits	10
Pre-requisite	AF112

AS 122	ANIMAL ANATOMY AND PHYSIOLOGY
Objective(s)	To introduce students to the structure and functions of the major body organs of the farmanimals.
Course Outline	Differences between anatomy and physiology, terminology of anatomy, types of anatomy, planes of dissection, general anatomy of the cell, tissues, organs and systems, structure andfunction of animal cells and tissues. Skeletal and muscular system, Digestive system, Circulatory system, Urinary system, Reproductive system, Nervous and Endocrine system.
Instruction	–3 lectures per week, 1 practical - Identification and orientation of: the bones of the skeleton, the visceral organs, the muscle groups. Look at slides, anatomical models of organs, fresh tissues/organs of relevant anatomy discussed that week
Assessment	Three-hour exam, Two tests, Practicals as outlined above, Two assignments, One exam
Credits	12
Pre-requisite	None

YEAR 2: FIRST SEMESTER

AS 211	POULTRY PRODUCTION
Objective(s)	To introduce students to poultry production and management from hatching to theproduction of saleable products.
Course Outline	The poultry industry in Southern Africa. The evolution and classification of breeds together with characteristics and utility value. Reproduction, breeder management, incubation biology and principles of hatchery management, brooding and growing management, production of eggs and meat, principles of poultry nutrition and the influences of environmental and genetic factors on production. Poultry housing and equipment, Rearing systems and flock management and marketing of poultry products, poultry health, record keeping
Instruction	3 lectures / week, Practical -Demonstration of the external and internal anatomy of the chicken; brooder house preparation; egg grading; processing of broilers; video on broiler and layer management; a field trip to a commercial poultry farm.
Assessment	Three-hour exam, Two tests, Practicals as outlined above, Two assignments and one presented research work, One exam
Credits	10
Pre-requisite	AS 121

AS 212	PIG PRODUCTION
Objectives	To introduce students to the basic principles and practical skills in pig production andmanagement.
Course Outline	Overview of the pig industry in South Africa. Feeds and feeding; Pig housing; Biosecurity programs; digestion; Pig breeds; pig genetics breeding; Boar nutrition and management; breeding female-the Gilt, the Sow; production systems for growing pigs; farrowing management; management of Sows and Piglets; the suckling pig; the weaned pig; the grow/finish pigs; market carcass grading.
Instruction	Lectures: Three lectures per week Practical: Management procedures e.g., tail-docking, tooth-cutting, castrations, iron- injections, ear- tagging, feeding, breeding/mating, weaning, field visits.
Assessment	Three-hour exam, Two tests, Practicals as outlined above, Two assignments and one presented research work, One exam
Credits	10
Pre-requisite	AS 121

AH 211	ANIMAL DISEASES 2
Objectives	To assist students to get basic understanding of veterinary helminthology and entomology of animal health and economic importance.
Course Outline	General concepts of taxonomy, identification, pathogenesis, clinical signs, epidemiology and control of parasites of veterinary importance. Basic concepts of parasitic diseases relating to the application and interpretation oflaboratory diagnostic tests, their control and eradication.
Instruction	3 Lectures/week, practical-tick control, parasite identification, dipping, natural control oflivestock diseases
Assessment	3-hour exam, 2 tests, 2 assignments/practical reports
Credits	10
Pre-requisite	AH121

AE 211	FARM STRUCTURES
Objectives	Acquire both practical skills and theoretical knowledge of engineering principles of farm buildings in planning, ordinary construction, repair and maintenance of farm buildings. Develop fencing principles, objectives and designs as they apply in commercial farming. Describe the features, functions and designs of different handling and housing structures for small and large common livestock in South Africa Evaluate the overall farm structures layout in relation to functionality, appearance and cost.
Course Outline	Building planning, building engineering, Fencing, Animal behavior, Cattle Housing and Handling, Pig Housing and Handling, Poultry Infrastructure, Sheep and Goat Facilities,Special buildings.
Instruction	3 lectures per week, 2 Practical - Scale drawing and interpretation. Identify building tools and materials, building elements and structures. Operate basic animal handling equipment including spray race, milking systems and clutch pens. Produce a detailed plan and design of a farm structure of interest in small groups and present it to a panel. Establish the structuresubject to inputs from class presentation.
Assessment	2 tests, 2 practicals as outlined above, 2 assignments and one presented research work, Oneexam.
Credits	10
Pre-requisites	AE 121

PS 211	RANGELAND AND CULTIVATED PASTURE MANAGEMENT
Objectives	To provide an understanding of principles and theories governing rangeland and cultivatedpasture management.
Course Outline	Biomes, Veld types, importance of rangelands and cultivated pasture in South Africa, principles of rangeland and cultivated pasture management. Classification of pasture species, establishment of pastures, fertilizer and irrigation requirements. Forage conservation and fodder flow planning.
Instruction	3 Lectures/week; Practical – veld condition assessment (grass and bush survey), Fire ecology, Identification of grass and tree species, tiller counting, measuring leaf area index, estimating net assimilation rate, fodder flow planning. Identification of cultivated pasture species, silage and hay making
Assessment	2 hours exam, 2 tests, 2 assignments and practical reports as outlined in the instruction
Credits	10
Pre-requisite	None

AB 211	BUSINESS MANAGEMENT
Objectives	This course provides students with tools needed to measure management performance and financial condition of the farm business. It develops decision-making skills in planning, organizing, and directing and controlling farm business.
Course Outline	Introduction Business Management, Management and Decision Making, Measuring Farm Performance and Position, Farm Planning and Budgeting, Risk Management in Agriculture, Human Resource Management
Instruction	3 lectures/week; Practical - Case studies
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

YEAR 2: SECOND SEMESTER

AS 223	DAIRY PRODUCTION
Objectives	To provide students with knowledge in dairy production practices and managementprocedures.
Course Outline	Dairy breeds and their characteristics, dairy nutrition, reproduction management for dairy herd, dairy herd dynamics/ structure, dairy health management, milk production, dairy cattle handling facilities and procedures and dairy cattle identification and record keeping systems.
Instruction	3 Lectures/week, practical – branding, ear tagging, castration, milking procedures, post parlor feeding, calf rearing, heat spotting, fodder flow planning and dairy hygiene.
Assessment	Three-hour examination, two tests, two assignments and practicals as outlined above.
Credits	10
Pre-requisite	AS 111

AS 222	SMALL STOCK PRODUCTION
Objectives	To develop students' understanding on small stock production and management with consideration to breed differences, production stages and adaptation to the environment.
Course Outline	Economic importance of sheep and goats in South Africa, methods of classification of small stock, Sheep and goats breeds of economic importance in South Africa, small stock production systems and regionalization, fiber production and management, Small Stock nutrition, reproduction and breeding in small stock, small stock management at different Physiological stages, basic flock health principles and Small Stock identification and record keeping.
Instruction	2 Lectures/week, practical – Ear tagging, castration, shearing, wool sorting, skirting, cashmere-harvesting, tattooing, foot trimming, dosing, fodder flow planning, small stockfarm visit,
Assessment	Three-hour exam, two tests, two assignments, practicals as outlined above
Credits	10
Pre-requisite	AS 111

AS 221	ANIMAL PRODUCT PROCESSING
Objectives	To provide students with knowledge and skills in value added technologies in processing and preservation of animal products.
Course Outline	Various technologies in value adding animal products would be introduced to students. These will be in the meat industry: Grading, preparing for the market, preserving and processes involved. Dairy Industry: Value adding and processing, cheese making, various products on the market. Wool and hides: Processing preparation for the market.
Instruction	3 Lectures/week and practical – visits to factories in the industry
Assessment	3-hour examination, 2 tests, 2 assignments, practical as outlined in the instruction
Credits	10
Pre-requisite	None

AQ 221	AQUACULTURE
Objectives	To provide learners with knowledge and skills in aquaculture husbandry.
Course Outline	Aquaculture Industry in Southern Africa, production systems, selection of aquaculture species, Finfish species (Tilapia, trout, carp and catfish), Shellfish species (mussels, prawns, shrimps and oysters); Internal and external physiology of fish and shellfish; Nutritional requirements of particular fish; energy requirements, quality & quantity, ingredients, storage, feeding systems, Infrastructure, types of fish farms and Water quality management (Ponds, Cages, Tanks systems, recirculating systems, aquaponics, ropes, through flow, baskets, water management), causes of health problems, management, treatment, Aquaculture record, harvesting, processing and marketing of fish
Instruction	3 lectures and 1 practical per week
Assessment	2 tests, 2 assignments, practical tests/reports, 3-hour examination
Credits	10
Pre-requisites	None

FC 222	AGRICULTURAL PROJECT
Objective	Implement a business plan and market an agricultural product. The emphasis is less on experimental projects and more on production orientation. To demonstrate orally and in writing an understanding of basic production/research, experimental/production project development, implementation.
Course Outline	Implementing a project, setting project objectives, generating a literature review, project layout, on-farm, laboratory and field experiments, project results presentation, interpretation of results, generate income, conclusion and recommendations.
Instruction	Students are required to carry out a project with an experimental and production focus.
Assessment	An onsite assessment of the project, and final report with experimental, production and financial sections.
Credits	10
Pre-requisite	None

AS 222	BEEF PRODUCTION
Objective	To equip students with an understanding of principles, concepts and practices underlying the beef production system while conserving natural resources.
Course Outline	The beef industry of South Africa, beef breeds, breeding and selection, production systems, heifer and cow management, nutrition of beef herd, general management thereof and marketing
Instruction	3 Lectures/week; practical – branding, dehorning, castration, ear tagging, breeding practices, breed identification, visit to beef farms, abattoirs and feedlots.
Assessment	Three-hour examination, two tests, two assignments and practical reports as outlined above.
Credits	10
Pre-requisite	AS 111

YEAR 3: FIRST SEMESTER

WA 311	WORK-INTEGRATED LEARNING
Objective	To expose students to realities of the working environment while enhancing theiremployability.
Course Outline	Administration (basic office skills & personnel management), subject matter specific responsibilities, e.g., management practices of crop, animal production and agro – processing firms and any other tasks relevant to the particular placement.
Instruction	6 months in a working place (farm/office/industry/organization etc.) with relevantexperience in animal production.
Assessment	On site evaluation (assessment by the on-work supervisor and lecturers assessment visits), performance report writing and oral presentation.
Credits	60
Pre-requisite	Two failed courses outstanding

YEAR 3: SECOND SEMESTER

WA 321	WORK-INTEGRATED LEARNING
Objective	To expose students to realities of the working environment while enhancing theiremployability.
Course Outline	Administration (basic office skills & personnel management), subject matter specific responsibilities, e.g., management practices of crop, animal production and agro – processing firms and any other tasks relevant to the particular placement.
Instruction	6 months in a working place (farm/office/industry/organization etc.) with relevantexperience in animal production.
Assessment	On site evaluation (assessment by the on-work supervisor and lecturers assessment visits), performance report writing and oral presentation.
Credits	60
Pre-requisite	WA 311

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

AGRIBUSINESS

	Courses	Course Code	Pre-requisite	Credits	
1	Applied Mathematics	AF113		8	8
2	Introduction to Agricultural Economics	AB111		8	8
3	Communication	AF111		8	8
4	Computer Application	AF114		8	8
5	Farm Machinery & Workshop Practice	AE111		8	8
6	Plant Botany and Physiology (*Electives*)	CS111		8	-
7	Introduction to Crop (*Electives*)	CS112		8	-
8	Animal Production (*Electives*)	AS111		-	8
9	Basic Scientific Concepts (*Electives*)	AF112		8	
10	Agricultural Biology (*Electives*)	AF115			8
	Total Semester 1 Credits			64	64
	Courses	**Course Code**	**Pre-requisite**	**Credits**	
11	Introduction to Soil Science	SS121		8	8
12	Production Economics	AB123		8	8
13	Agricultural Extension	AX121		10	10
14	Applied Farm Accounting	AB121		8	8
15	Introduction to Management and AgriBusiness	AB122			12
16	Animal Anatomy and Physiology *(Electives)*	AS122		-	10
17	Plant protection (*Electives*)	CS121		10	-
18	Animal Diseases 1 (*Electives*)	AH121	AF115	-	10
19	Fruit Production *(Electives)*	HS121	CS111	8	-
20	Animal Nutrition *(Electives)*	AS123	AF115	-	10
Total Semester 2 Credits				66	66
Total Year 1 Credits				130	130
	Courses	**Course Code**	**Pre-requisite**	**Credits**	
21	Financial Management	AB214	AB121	10	10
22	Agricultural Marketing	AB213	AB122	12	12
23	Business Management	AB211	AB111	8	8
24	Entrepreneurship	AB212		8	8
25	Soil fertility & Plant Nutrition *(Electives)*	SS211		8	-
26	Poultry Production *(Electives)*	AS211	AS111	-	10
27	Pig Production *(Electives)*	AS212	AS111	-	10
29	Citrus Production *(Electives)*	HS212		8	-
30	Vegetable Production	HS211		12	
Total Semester 3 Credits				66	58

	Courses	Course Code	Pre-requisite	Credits	
30	Agricultural Food Systems	AB221	AB213	8	8
31	Project Management	AB224		8	8
32	Entrepreneurial Project	AB223	AB212	8	8
33	Land Use Planning & Management	FC221	SS121	10	10
34	Supply Chain Management	AB222	AB211	8	8
35	Human Resource Management	AB225		8	8
36	Small Stock Production *(Electives)*	AS222	AS111	-	10
37	Dairy Production *(Electives)*	AS223	AS111	-	10
38	Beef Production *(Electives)*	AS224	AS111	-	10
39	Field Crop Production *(Electives)*	CS222	CS112	12	-
40	Landscaping and Ornamental Horticulture *(Electives)*	HS221		10	-
Total Semester 4 Credits				60	60
Total Year 2 Credits				136	128
	Courses	Course Code	Pre-requisite	Credits	
41	Work Integrated Learning	WB311	Two failed courses outstanding	60	60
42	Work Integrated Learning	WB321	WB 311	60	60
Total Semester 5 and 6 Credits				120	120
Total Qualification Credits				374	374

YEAR 1: FIRST SEMESTER

AF 113	APPLIED MATHEMATICS
Objectives	On completion of the instructional offering the student should be able to know or understand mathematical preliminaries, the straight line and applications, simultaneous equations, differentiation and applications, and integration and applications.
Course Outline	Measurements: basic and derived units and applications; integers, their operation and application; factors multiples and application; vulgar and decimal fractions; degree of accuracy – tolerance, significant figures, decimal places, rounding off and rough checks; means – theory practical use of averages, ratio percentages; powers; logarithms; roots; basic algebraic factors; formulae and linear
Instruction	2 lectures/week; Tutorials
Assessment	Three-hour Examination, Two Tests, Two Assignments and/or practical reports.
Credits	8
Pre-requisite	None

AF 112	BASIC SCIENTIFIC CONCEPTS *(Elective)*
Objectives	To understand the basic concepts of chemistry. To write balanced equations.To describe chemical reactions. To demonstrate simple experiments in the laboratory such as separation of simple mixtures, acid-base titration, determination of boiling and melting points. To understand qualitative analysis of anions and cations. To understand the basic concepts of physics and its relevance to forestry.
Course Outline	Matter and its properties; elements, compound and mixtures; atomic weights, formula weight; volumetric analysis and calculations. Energy: forms of energy and sources; atomic structure and periodic table; chemical bonding; acids, base and salts and their applications in agriculture; the mole concepts: metals, nonmetals and metalloids; properties of water; air composition and air pollution; oxidation-reduction reactions. Introduction to organic chemistry: chain formation of carbon, structure and names of unbranched alkane; alkenes; primary alcohols. Gasses, liquids and solids. Physical quantities and their measurements: mass, length, time, density, speed, acceleration. Principles of gravity and friction. Definition and principles of heat, heat, humidity. Pressure, work, power, energy and energy transfer. Electricity and elementary magnetic theory; light; basic machines.
Instruction	2 lectures/week; Practical – conduct chemistry and physics laboratory experiments.
Assessment	2 tests; Practical/Assignment; Examination; Presentation
Credits	8
Pre-requisite	None

AF 115	AGRICULTURAL BIOLOGY *(Elective)*
Objective	To introduce students to the scientific methods and the different fields of life, sciencesand Agriculture.
Course Outline	Principle of Taxonomy, the cell structure and function, tissue, organs and systems (plants, animals), chemistry of biological molecules, the flow of energy within organisms, Autotrophs and heterotrophs, overview of photosynthesis, overview of cellular respiration, DNA as a hereditary material, Genes and synthesis of polypeptides, Cellular reproduction (Mitosis and meiosis, Mendelian genetics, Population and community ecology, Ecosystems, Biomes and Biosphere, The diversity of plants, The morphology of flowering plants (Roots, stems, Leaves, flowers, Inflorescence, fruits, seeds).
Instruction	3 lectures and 1 Practical/week (Identification and classification, Use of microscope, Microscopy, preparation of slides and types of tissues, Identification of plant organs and structure of flowering plants, mitosis and meiosis)
Assessment	2 tests, 2 assignments, practical tests/reports, Three-hour examination
Credits	12
Pre-requisite	None
Credits	8
Pre-requisite	None

AF111	COMMUNICATION
Objective	To develop students' understanding of the principles, concepts, and theories of effective communication in technical and professional contexts. To equip students with oral communication and presentation skills for effective delivery of technical information. To enhance students' academic and professional writing skills for clear, logical, and well-organized technical communication.
Course Outline	**Communication Concepts and Theories** (Definition of communication; interpersonal communication process and models; Elements of communication; communication contexts; barriers and strategies to overcome communication barriers) **Small group communication** (Definition of a small group; Virtual group communication; group formation and conflict management strategies; group dynamics) **Oral presentation (**Oral presentation and public speaking: audience analysis: adapt the presentation to a variety of audiences) **Report Writing (**Different types of reports; systematic report-writing process; organizing reports logically; principles of graphic presentation**;** Report format for a specific purpose) **Academic Writing** (Stages of composing in the academic writing process; construct an appropriate topic, essay writing, citation, and references) **Meetings** (Meeting etiquette; Notice and agenda of the meeting; minutes taking; chairing of meeting strategies: office bearers and their duties)
Instruction	3 lectures/week; 1 Practical (Conflict management exercises; Oral presentations and public speaking practice session; prepare notice, agenda, and take minutes while performing different meeting roles, chairperson, secretary, etc.; Essay and report structure, referencing, and writing process; Construction and interpretation of graphics (tables, charts, diagrams) in technical reports)
Assessment	2 Assignments, 2 Tests, one-3-hour examination, presentations
Credits	8
Pre-requisite	None

AF 114	COMPUTER APPLICATION
Objectives	To introduce students to the basic concepts of computer hardware and the use of softwarefor generation of reports.
Course Outline	Understanding Microsoft operating systems, Microsoft office applications including MS word, MS excel, MS PowerPoint and MS Access, understand the function of the various computer hardware including mouse, keyboard, CPU, monitors, and the use of internet searchengines.
Instruction	2 lectures/week; Practical – conduct chemistry and physics laboratory experiments.
Assessment	2 tests; Practical/Assignment; Written and Practical Examination; Presentation
Credits	8
Pre-requisite	None

FC 113	FARM MACHINERY AND WORKSHOP PRACTICE
Objective	To acquire practical skills and theoretical knowledge to perform the unspecialized engineering activities for effective planning and management of farm operations.
Course Outline	Internal combustion engine: basic engine parts and their functions, four stroke diesel and petrol engines, two stroke engines, tractor transmission, tractor engine construction, basic mechanical workshop tools; Tractor controls: Power take-off, three point linkage, tractor hydraulics, external hydraulics; Field operations: primary and secondary tillage, tillage implements; crop protection and harvesting equipment; conservation tillage; Farm electricity: Electrical terminology (power, current, voltage, resistance) and calculations, electrical materials e.g. wires, cables, switches, etc. , electrical instruments (e.g. voltmeter, ammeter, multi-meter), definition of single & triple phase electricity, use of protective devices such as fuses, MCBs, ELCBs and relays including earthing, basics of generators & electric motors; Fitting: Fitting shop tools and materials, work benches, holding devices and files, hack- sawing, types of blades, handling of measuring instruments, checking of zero error, finding of least count (all gauges including dial gauge), safety precautions; Welding: welding and its importance in engineering practice, types of welding, materials to be welded, welding equipment, accessories, safety clothing and precautions, welding hazards and remedies, earthing; Plumping: Plumbing in domestic and industrial applications, plumbing tools, pipe joints and fittings, cutting, threading and laying of pipes with different fittings using PVC, copper, aluminum, LDPE, HDPE pipes, using PVC pipes; Carpentry: Types of wood, hand and power tools; types of wooden joints; safety precautions in carpentry shop.
Instruction	3 lectures and 1 Practical per week, Group work, Excursions.
Assessment	Formative and summative assessments of participation in and outcomes from practical hands-on training activities, practical reports.
Credits	8
Pre-requisite	None

CS112	INTRODUCTION TO CROP PRODUCTION (*Elective*)
Objective	To introduce students to the basic principles of Crop Production, as an understanding these forms the foundation for crop production practices and are also basic to other forms of agriculture.
Course Outline	Introduction to agro-meteorology; Origin, classification, and nomenclature of economic crops; Plant physiology; Seed quality, germination, crop yield, plant growth and development; Mineral nutrition; Plant propagation and allelopathy
Instruction	2 lectures and 1 practical per week (identification of different crop seeds, fertilizers,herbicides, and pesticides).
Assessment	2 major tests, one- 3-hour examination, practical reports, assignments
Credits	8
Pre-requisite	None

AS 111	INTRODUCTION TO ANIMAL PRODUCTION (*Elective*)
Objectives	To introduce students to basic animal production concepts and practices.
Course Outline	Animal contribution to human needs, adaptation of animals to different environments, general housing requirements, animal production systems, (beef, dairy, sheep, goats, pigs, poultry), general features differentiating breeds, animal breeding, biotechnology in animal production, nutrition, animal welfare versus animal rights versus factory farming.
Instruction	3 Lectures/week; Practical – Identification of animal production systems (beef, dairy, small stock, poultry, piggery), different breeds under animal production systems, Feeds and feeding of different types of farm animals, basic breeding practices
Credits	8
Pre-requisite	None

CS111	PLANT BOTANY AND PHYSIOLOGY *(Elective)*
Objective	The aim of this course is to give students a greater understanding of the physiological processes, plant responses and environmental factors affecting growth and productivity of the agricultural crops we depend on, and to stimulate students' learning of basic concepts in crop growth and development. The course is also designed to enable students to use the knowledge of crop physiology to answer practical questions. Basic concepts underlying crop physiology will be demonstrated through laboratory exercises.
Course Outline	Describe the morphology and physiology of plants, the bio-energetic relationships in plant metabolism, physiology and biochemistry of crop seed germination and dormancy, physiological aspects of crop growth and phenological development, mechanisms by which crop plants acquire and utilize resources like carbon, water, light and mineral nutrients, concepts of assimilate translocation and partitioning in a crop plant, physiology of crop adaptation to their environment; physiological basis for crop production and management practices
Instruction	1 lecture/week, practical arranged
Assessment	Presentations, assignments/practical reports; 2 tests; one-3-hour examination
Credits	8
Pre-requisite	None

AS 122	ANIMAL ANATOMY AND PHYSIOLOGY *(Elective)*
Objective(s)	To introduce students to the structure and functions of the major body organs of the farmanimals.
Course Outline	Differences between anatomy and physiology, terminology of anatomy, types of anatomy, planes of dissection, general anatomy of the cell, tissues, organs and systems, structureand function of animal cells and tissues. Skeletal and muscular system, Digestive system, Circulatory system, Urinary system, Reproductive system, Nervous and Endocrine system.
Instruction	–3 lectures per week, 1 practical - Identification and orientation of: the bones of the skeleton, the visceral organs, the muscle groups. Look at slides, anatomical models of organs, fresh tissues/organs of relevant anatomy discussed that week
Assessment	Three-hour exam, two tests, Practicals as outlined above, Two assignments, One exam
Credits	12
Pre-requisite	None
Credits	8
Pre-requisite	None

AB 111	INTRODUCTION TO AGRICULTURAL ECONOMICS
Objectives	To facilitate the learning process for the learners to understand the basic economic problem of relative scarcity, understand the process of production, specialization and exchange, understand the principles of demand, supply and price determination, distinguish the effect on demand and supply of changes in various factors, and understand the basics of production economics
Course Outline	What economics is it all about? Economic systems, Production, income and spending in the mixed economy, Demand, supply and prices, Demand and supply in action, Elasticity, The theory of demand: the utility approach, The theory of demand: the indifference approach,Market structure: Overview and perfect competition
Instruction	3 lectures and 1 Practical per week
Assessment	Practical reports, 2 tests, 2 assignments and examination (1 x 3hr paper)
Credits	8
Pre-requisite	None

YEAR 1: SECOND SEMESTER

SS121	INTRODUCTION TO SOIL SCIENCE
Objectives	To describe and explain origins of soil, the factors involved in soil formation and weathering, soil physical and chemical properties, and soil-water plant relations.
Course Outline	Soil formation, rocks and minerals including Alumina-silicate clay minerals; Factors involved in soil formation and weathering; Soil chemistry; Origin and significance of negative surface charges; Acid- based saturation; Soil and water suitability; Nutrients and their availability; Soil physical properties; Soil texture and structures; Bulk and particle density; Soil porosity and permeability; Soil consistency and colour; Soil water; water retention forces; soil water potential and plant-soil water relations; water movement; water management.
Instruction	2 lectures/week; Practical - observations of different minerals; mechanical analysis; chemical analysis; determination of water-holding capacity.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

AH 121	ANIMAL DISEASES 1 *(Elective)*
Objectives	To develop students' understanding of the pathogenesis of diseases caused by bacteria, viruses, protozoa, fungi and other pathogenic organisms and prevention and control thereof.
Course Outline	Introduction to bacterial, viral, protozoa and fungal diseases of importance to domestic animals in South Africa, general concepts of the taxonomy, identification, pathogenesis, clinical signs, epidemiology and control of these diseases, basic concepts of infectious diseases relating to the application and interpretation of laboratory diagnostic tests, and their control and eradication.
Instruction	3 lectures/week, 1 practical/week –laboratory identification of micro-organisms causing diseases, identification of symptoms of diseases, interpretation of lab diagnostic test.
Assessment	3 hours exam, 2 tests, 2 assignments/ practicals as outlined on instructions
Credits	10
Pre-requisite	AF112

CS 121	PLANT PROTECTION (*Elective)*
Objective	To introduce students to principles and practices of weed science, entomology, and plant pathology as a means for managing plant diseases, weeds and other pests that affect growth and development of agricultural crops
Course Outline	General introduction to crop protection; Major groups of agricultural pests, their management and control methods (insect pests; nematodes, diseases, weeds); pests damage and monitoring methods; IPM; agrochemicals (storage; calibration; mixing, application and safety)
Instruction	2 lectures/week; 1 practical/week; visits to agro-chemical industry
Assessment	Two major tests, one- 2-hour examination, practical reports, assignments
Credits	8
Pre-requisite	None
Credits	8
Pre-requisite	AB 111

AX121	AGRICULTURAL EXTENSION
Objective	To develop students' understanding of the fundamental theories, systems, and practices that shape Agricultural Extension and its role in agricultural and rural development. To equip students with the knowledge and practical skills to apply participatory, communicative, and adult-learning approaches in agricultural extension practice
Course Outline	Concepts of Extension (Introduction to extension -definitions of agricultural extension, extension principles, roles of extension worker in agricultural development); History of extension (the origin of extension in different regions-developed & developing countries); Extension systems (types of extension systems – FSR/E; T&V); Applied adult learning theory (Characteristic of farmers, Learning principles related to characteristics of adults, conditions conducive for learning, Use of variety of teaching methods, improving effectiveness of farmers learning); Participatory rural appraisal and Methods, Guidelines for field participatory rural appraisal); Norms and Standards for extension and advisory service (Objectives of norms and standards, clients, guiding principles)
Instruction	3 lectures and 1 practical per week (meeting procedures, group discussions, public speaking, preparation of visual aids, farm visit planning, farm visits and analysis, presentations of farm findings, and case study analysis)
Assessment	Two major tests, one 3-hour examination paper, research reports, presentations, andassignments
Credits	10
Pre-requisite	None

AB 121	APPLIED FARM ACCOUNTING
Objectives	To facilitate the learning process for the learners to understand the basic principles of farm business management with special emphasis on planning and control of the farm business, to distinguish between relevant and irrelevant data to facilitate the above process, to understand the farm business management aspects of a land use plan, and to understand the operation of a simple farm accounting system.
Course Outline	Introduction to the cash Analysis Book, Trading account and Balance sheet. Financial analysis of accounts. Credit management. Capital budgeting. Controlling the use of depreciable assets.
Instruction	3x Lectures/week; practical; tutorials (drawing up the Cash Analysis Book and Balancesheet)
Assessment	Practical reports, Two tests, 2 assignments and examination (1 x 3hr paper)
Credits	8
Pre-requisite	None

AB 122	INTRODUCTION TO MANAGEMENT AND AGRIBUSINESS
Objective	To equip students with the knowledge of principles and management of Agribusiness. The impact of small scale and medium scale agribusiness is crucial in the development andsustaining economic growth of the country.
Course Outline	The concept and framework of Agribusiness Management, Introduction to small and medium scale enterprises, Employment and enterprise analysis, Sources and procedures for credit application for small and medium enterprises in South Africa, Product Quality and safety, Innovations
Instruction	2 Lectures /week, 1 Practical /week
Assessment	2 major tests, practical reports, two assignments and one presented research work, Oneexamination.
Credits	12
Pre-requisite	None

HS 121	FRUIT PRODUCTION *(Elective)*
Objective	To provide students with knowledge and skills in production practices of selected fruit crops (tropical, subtropical, temperate and tree nuts).
Course Outline	Fruit industry overview; Cultivation of tropical and subtropical fruit crops; Cultivation of temperate fruit crops; Cultivation of Pecan & Macadamia nuts; post-harvest handling andphysiology.
Instruction	2 lectures/week; 1 practical/week (tree management practices, pruning, scouting, identification and evaluation of fruit cultivars, visits to relevant fruit farms & processingand packaging factories)
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	10
Pre-requisite	CS111

AS 123	ANIMAL NUTRITION *(Elective)*
Objectives	To enable students to apply the principles of animal nutrition in livestock feedingpractices.
Course Outline	Non-ruminant digestion and absorption; ruminant digestion and absorption; evaluation of energy in livestock feeds; nutritional requirements for maintenance and production; nutrient metabolism; feed additives and supplements; feed preparation and processing; feed laws and labeling; ration formulation and balancing.
Instruction	3 lectures per week, Feed manufacturing company visits, feed intake trial at the Institute, identify samples of various concentrates, roughages, forages, and feed supplements commonly used in South Africa. Computation of balanced rations for individual animals is practical.
Assessment	3 hours exam, 2 tests, 2 practicals as outlined in the instruction, assignments and one presented research work, One exam
Credits	10
Pre-requisite	AF112

YEAR 2: FIRST SEMESTER

AB 214	FINANCIAL MANAGEMENT
Objective	The purpose of this course is *to* equip students with grounded knowledge of financial management principles. As an integral part of the overall management, financial Management is mainly concerned with acquisition and use of funds by an organization.
Course Outline	Financial Management: Important concepts, Financial projection, Management of working capital, Capital expenditure decisions, Financing decisions: Sources and costs, Financial Analysis and Budgets
Instruction	3 lectures and 1 practical per week, Group work, tutorials. Calculate and interpret ratios from management's point of view. Explain the purposes of budgeting Prepare a sales budget, purchases or production budget, cost of sales budget, expenses budget, budgeted income statement, cash budget and budgeted balance sheet
Assessment	2 tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	12
Pre-requisite	SS 211

AB 213	AGRICULTURAL MARKETING
Objective	To equip students with deeper understanding in marketing principal importance of marketing, buyer behaviors, pricing decisions, marketing research, market liberalization, marketing strategy, planning and control, new product development and commodity marketing.
Course Outline	Agricultural and Food Marketing, Buyer's behavior, Pricing decisions, Marketing research, Marketing strategy, planning and control, new product development, Commodity marketing
Instruction	3 Lectures /week, 1 Practical/week
Assessment	2 tests, practical reports, two assignments and one presented research work, One exam
Credits	12
Pre-requisite	None

HS 212	CITRUS PRODUCTION (*Electives*)
Objective	To provide students with knowledge and skills in production practices associated with citrusfruit crops.
Course Outline	Introduction to citrus industry (history, production areas, economic, nutritional, and medicinal importance); Citrus biology (vegetative citrus tree development and function, reproductive physiology, genetic improvement); Cultivars and rootstocks; Citrus nursery practices; Soil and climatic requirements; Fertilization; Pests, diseases and IPM; Harvesting and post- harvest handling and technology
Instruction	3 lectures/week, 1 practical (identification of weeds, identification of insect pests and diseases; use of sprayers, safe handling of pesticides and herbicides)
Assessment	2 tests, one- 3-hour examination, practical reports, assignments
Credits	8
Pre-requisite	None

AS 212	PIG PRODUCTION (*Elective*)
Objectives	To introduce students to the basic principles and practical skills in pig production andmanagement.
Course Outline	Overview of the pig industry in South Africa. Feeds and feeding; Pig housing; Biosecurity programs; digestion; Pig breeds; pig genetics breeding; Boar nutrition and management; breeding female-the Gilt, the Sow; production systems for growing pigs; farrowing management; management of Sows and Piglets; the suckling pig; the weaned pig; the grow/finish pigs; market carcass grading.
Instruction	Lectures: Three lectures per week Practical: Management procedures e.g., tail-docking, tooth-cutting, castrations, iron- injections, ear- tagging, feeding, breeding/mating, weaning, field visits.
Assessment	Three-hour exam, two tests, Practicals as outlined above, Two assignments and one presented research work, One exam
Credits	10
Prerequisite	AS 121

AB 211	BUSINESS MANAGEMENT
Objectives	This course provides students with tools needed to measure management performance and financial condition of the farm business. It develops decision-making skills in planning, organizing, directing, and controlling farm business.
Course Outline	Introduction Business Management, Management and Decision Making, Measuring Farm Performance and Position, Farm Planning and Budgeting, Risk Management in Agriculture, Formation and function of companies and NGOs
Instruction	3 lectures/week; Practical - Case studies
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

AB 212	ENTREPRENEURSHIP
Objective	To equip students with understanding of entrepreneurship concepts in farming and Agri- business environments. Application of entrepreneurship principles, skills to establish, to run and manage a successful farming business.
Course Outline	Entrepreneurial Process Dynamics, Entrepreneurial Human Capital, The Entrepreneurial Environment, Entrepreneurial Intentions and Opportunities, Preparing a Business Plan, Paths to Entrepreneurship, Policy Frameworks for Start-ups, Strategic Entrepreneurship, E-Commerce, and Entrepreneurship
Instruction	3 lectures/week, 1 practical/week (business plan development); tutorials
Assessment	Two major tests, one 3-hour examination paper, research reports, presentations andassignments
Credits	8
Pre-requisite	None

HS 211	VEGETABLE PRODUCTION (*Elective*)
Objective	To provide students with principles and practices commonly employed in cultivation ofhorticultural crops.
Course Outline	Introduction to vegetable industry, Classification of vegetable crops, crop establishment; crop management; indigenous vegetable crops & food security; post-harvest handling of vegetable crops; Controlled environment production & facilities and production systems; Economics of vegetable production, post-harvest physiology and technology.
Instruction	3 lectures and 1 practical per week, group work, excursions
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	12
Pre-requisite	None

AS 211	POULTRY PRODUCTION (*Elective*)
Objective(s)	To introduce students to poultry production and management from hatching to the production of saleable products.
Course Outline	The poultry industry in Southern Africa. The evolution and classification of breeds together with characteristics and utility value. Reproduction, breeder management, incubation biology and principles of hatchery management, brooding and growing management, production of eggs and meat, principles of poultry nutrition and the influences of environmental and genetic factors on production. Poultry housing and equipment, Rearing systems and flock management and marketing of poultry products, poultry health, record keeping
Instruction	3 lectures / week, Practical -Demonstration of the external and internal anatomy of the chicken; brooder house preparation; egg grading; processing of broilers; video on broiler and layer management; a field trip to a commercial poultry farm.
Assessment	Three-hour exam, two tests, Practicals as outlined above, Two assignments and one presented research work, One exam
Credits	10
Pre-requisite	AS 121

SS 211	SOIL FERTILITY AND PLANT NUTRITION (Elective)
Objective	An introductory course that is aimed at building the students' understanding of soil fertility and soil analysis
Course Outline	Soil fertility and plant nutrition, Soil sampling methods, Nutrient's mobility in soils; Current issues, Essential elements (uptake, plant content, mobility in plant, function in plant, deficiency symptoms, typical content and problems in SA soils), ION exchange, Soil pH and its management, Soil Organic matter and its management; Introduction to fertilizers
Instruction	3 lectures and 1 practical per week, Group work, Excursion
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments, presentations
Credits	8
Pre-requisite	SS 211

YEAR 2: SECOND SEMESTER

CS 2222	FIELD CROP PRODUCTION *(Elective)*
Objective	To introduce students to the major field crops (cereals, pulses, and potato) and to agronomy as an integrated science
Course Outline	Crop production systems, morphology, physiology, and management practices of different field crops (maize, sorghum, wheat, potatoes, and pulses)
Instruction	3 lectures/week, 1 practical (identification of pests and diseases and nutrient deficiency symptoms, field visits to farms)
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	12
Pre-requisite	HS 111

AS 222	SMALL STOCK PRODUCTION (Elective)
Objectives	To develop students' understanding on small stock production and management with consideration to breed differences, production stages and adaptation to the environment.
Course Outline	Economic importance of sheep and goats in South Africa, methods of classification of small stock, Sheep and goats breeds of economic importance in South Africa, small stock production systems and regionalization, fibre production and management, small stock nutrition, reproduction and breeding in small stock, small stock management at different physiological stages, basic flock health principles and small stock identification and record keeping.
Instruction	2 Lectures/week, practical – Ear tagging, castration, shearing, wool sorting, skirting, cashmere- harvesting, tattooing, foot trimming, dosing, fodder flow planning, small stockfarm visit,
Assessment	Three-hour exam, two tests, two assignments, practicals as outlined above
Credits	10
Pre-requisite	AS 111

AS 224	BEEF PRODUCTION (Elective)
Objective	To equip students with an understanding of principles, concepts and practices underlying the beef production system while conserving natural resources.
Course Outline	The beef industry of South Africa, beef breeds, breeding and selection, production systems, heifer and cow management, nutrition of beef herd, general managementthereof and marketing
Instruction	3 Lectures/week; practical – branding, dehorning, castration, ear tagging, breeding practices, breed identification, visit to beef farms, abattoirs and feedlots.
Assessment	Three-hour examination, two tests, two assignments and practical reports as outlinedabove.
Credits	10
Pre-requisite	AS 111

AB 221	AGRICULTURAL FOOD SYSTEMS
Objectives	This course will introduce students to the concept of food systems at the local, regional, and global levels. Students will examine and reflect on critical issues influencing food production, processing, distribution, and consumption. Scientific and technical publications, multimedia presentations, field experiences, observations, informal interviews, and class discussions will be used to promote student understanding.
Course Outline	Define the phrase food systems, Local, regional, and global food systems, Factors affecting food production, distribution and consumption, Ecological and environmental factors associated with food systems, Food processing for local, regional, and global food systems, the concept of food security, Dietary guidance, Consumer health and nutrition, Food access and possible policy solutions: problems facing low-income consumers, The economics of food packaging and labeling, Food insecurity and supplementary nutrition, Processing of crop product, Processing of animal product, various technologies in value adding animal products.
Instruction	2 lectures/week, practical
Assessment	3-hour exam, 2 tests, two assignments, practical reports
Credits	8
Pre-requisite	None

AB 224	PROJECT MANAGEMENT
Objectives	To expose students to the basic philosophy of project management as a unique, specialized discipline of management. The course will introduce certain selected project management concepts and terminologies. It will also provide an overview of the whole Project Management Body of Knowledge. It enables you as a student to solve practical problems and apply the basic project management tools and techniques. The course will help you to attain a basic academic-oriented knowledge of the principal aspects of project management and to prepare you for further, more advanced programmes.
Course Outline	Project Management Concept, Project Identification, Project Formulation or Development, Project Planning and Design, Project Scheduling and Costing, Project Execution and Administration, Project Control
Instruction	3 lectures/week, practical, presentations (case studies of past and present entrepreneurs)
Assessment	3 hours exam, 2 tests, 2 assignments and Practical reports
Credits	8
Pre-requisite	None

FC 221	LAND USE PLANNING AND MANAGEMENT
Objective	To give students systemic thinking in resource allocation and planning and to understand mapping and mapping techniques using GIS and remote sensing software.
Course Outline	Introduction to land use planning, Overview of planning process, Steps in land use planning, Soil classification in South Africa, Introduction to natural resources, Agricultural land assessment, GIS, remote sensing and mapping, Role of extension in land use planning
Instruction	3 lectures/week, practical
Assessment	3-hour exam, Two tests, two assignments, practical reports
Credits Pre-requisite	10 None

AB 222	SUPPLY CHAIN MANAGEMENT
Objectives	To equip students with an understanding of supply chain management concepts and in particular the eight supply chain processes as well as related topics such as: supply chain system slacks, demand management, supply management, inventory management, location management, transportation management, and source management. In addition, this course/module will equip students with the knowledge to understand the differences between supply chain management and logistics concepts.
Course Outline	Introduction to Supply Chain Management, Supply Chain System Slacks, Demand management, Supply management, Inventory management, Production management, Transportation management, Location management, Source management
Instruction	2 lectures/week, practical
Assessment	3-hour exam, 2 tests, two assignments, practical reports
Credits Pre-requisite	8 None

AB 225	HUMAN RESOURCE MANAGEMENT
Objectives	To understand the human resource management practices and the integration of human resource strategy and business strategy.
Course Outline	Introduction to human resource management; human resource and business strategy; human resource planning; recruitment, selection and induction; employee training and development; performance management; compensation; employee benefits and services; human and employment relations; human resource information systems and the legal environment of human resource management
Instruction	2 lectures/week; Practical - Case studies on human resource related issues.
Assessment	2 tests, Practical/Assignments; Examination; Reports
Credits	8
Pre-requisite	None

HS 221	LANDSCAPE AND ORNAMENTAL HORTICULTURE (*Elective*)
Objectives	To expose students to landscaping, characteristics and cultivation requirements of ornamental plants, marketing practices and procedures of bedding plants.
Course Outline	Ornamental horticulture and turf grass utilization: Classification of ornamental plants; Flowering plant reproductive cycle; Nursery management and production; Controlled environment cultivation practices of ornamental plants; Garden pests and diseases and weed control; Turf grass identification and construction of turf grass facilities; Development of a garden maintenance programme; Treatments of florist material; Marketing of bedding plants. Landscaping: Principles of landscaping; landscape designing, functional and visual uses of plants in the landscape; Principles and operations of the basic power units applicable to horticulture; Garden plans and drawings.
Instruction	3 lectures/week, presentations (case studies of past and present entrepreneurs, propagation practices, garden designing and maintenance)
Assessment	3 hours exam, 2 tests, 2 assignments and Practical reports
Credits	10
Pre-requisite	None

AS223	DAIRY PRODUCTION (*Elective*)
Objectives	To provide students with knowledge in dairy production practices and managementprocedures.
Course Outline	Dairy breeds and their characteristics, dairy nutrition, reproduction management for dairy herd, dairy herd dynamics/ structure, dairy health management, milk production, dairy cattle handling facilities and procedures and dairy cattle identification and record keeping systems.
Instruction	3 Lectures/week, practical – branding, ear tagging, castration, milking procedures, post parlor feeding, calf rearing, heat spotting, fodder flow planning and dairy hygiene.
Assessment	Three-hour examination, two tests, two assignments and practical as outlined above.
Credits	10
Pre-requisite	AS 111

AB 223	ENTREPRENEURSHIP PROJECT
Objective	Implement a business plan and market an agricultural product. The emphasis is less on experimental projects and more on production orientation. To demonstrate orally and in writing an understanding of basic production/research, experimental/production project development, implementation.
Course Outline	Implementing a project, setting project objectives, generating a literature review, project layout, on-farm, laboratory and field experiments, project results presentation, interpretation of results, generating income, conclusion and recommendations.
Instruction	Students are required to carry out a project with an experimental and production focus.
Assessment	An onsite assessment of the project, and final report with experimental, production andfinancial sections.
Credits	10
Pre-requisite	None

YEAR 3: FIRST SEMESTER

WB 311	WORK-INTEGRATED LEARNING
Objective	To expose students to the realities of the working environment while enhancing theiremployability.
Course Outline	Administration (basic office skills & personnel management), subject matter specific responsibilities, e.g., management practices of crop, animal production and agro–processing firms and any other tasks relevant to the placement.
Instruction	6 months in a working place (farm/ office/ industry/ organization etc.) with relevant experience of animal production.
Assessment	On site evaluation (assessment by the on-work supervisor and lecturers assessment visits), performance report writing and oral presentation.
Credits	60
Pre-requisites	All courses in year 1 and 2

YEAR 3: SECOND SEMESTER

WB 321	WORK-INTEGRATED LEARNING
Objective	To expose students to the realities of the working environment while enhancing their employability.
Course Outline	Administration (basic office skills & personnel management), subject matter specific responsibilities, e.g., management practices of crop, animal production and agro – processing firms and any other tasks relevant to the placement.
Instruction	6 months in a working place (farm/ office/ industry/ organization etc.) with relevant experience of animal production.
Assessment	On site evaluation (assessment by the on-work supervisor and lecturers assessment visits), performance report writing and oral presentation.
Credits	60
Pre-requisites	All courses in year 1 and 2

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

ADVANCED DIPLOMA PROGRAMMES

ADVANCED DIPLOMA IN AGRICULTURE (ANIMAL PRODUCTION) – AS400

1	Advanced Ruminant Production Systems	AS411		16
2	Advanced Animal Nutrition	AS412		14
3	Advanced Pasture Management	PS411		14
4	Research Methods and Biometry	FC411		16
Total Semester 1 Credits				60
5	Advanced Non-Ruminant Production Systems	AS421		16
6	Advanced Animal Breeding	AS422		16
7	Research Project	FC421		16
Total Semester II Core				52
9	Advanced Farm Business Management	AB421		12
10	Advanced Agricultural Extension	AX421		12
11	Processing of Animal Food products	AS423		12
12				
Total Semester 2 Credits				60
Total Qualification Credits				120

SEMESTER 1

AS411	ADVANCED RUMINANT PRODUCTION SYSTEMS
Objectives	It aims to provide the student with basic knowledge on the ruminant production systems, taking into account the factors affecting the strategies to manage key aspects such as feeding and reproduction. This will aid in increasing the efficiency of ruminant animal production systems through identification of possible corrections, based on a suitable process of data collection and interpretation. It will explore the fundamental genetics and physiology that underpin animal production in terms of reproductive technology, genetic improvement, dairy cattle production systems, Beef cattle production systems, Sheep and Goat production systems, meat, milk, wool and cashmere quality, and disease prevention and management. It will also aid students to gain an understanding of the issues and challenges currently facing ruminant producers in South Africa
Course Outline	Economics of large and small ruminant industries in South Africa, Management programmes, production Systems and techniques applicable to ruminant animals - Brief overview of current production systems of beef, dairy, sheep and goats (Intensive: Feedlots, Zero grazing, cultivated pasture grazing; Intensive versus Extensive grazing systems), Industry market objectives, principles of growth and development in ruminant livestock species, feeding and reproduction management strategies in the different systems focusing on latest research, Aspects of business management of the ruminant production enterprises, Production efficiency indicators, Profit drivers of the different production systems, Reproductive technology and management for ruminants, Applied breeding and genetics, principles of nutrition as it relates to sustainable and efficient ruminant livestock production, Common diseases for different production systems and their prevention, Management systems for sheep, goats, dairy and beef enterprises, product quality and marketing as it relates to ruminant livestock production, Current and future issues affecting industry development, e.g. welfare and human health concerns.

AS411	ADVANCED RUMINANT PRODUCTION SYSTEMS
Instruction	Lectures: Two lectures per week, practical: Assignment to work at a Farm Livestock Unit, develop and execute Projects to test/compare theory with practice, Discussions with cross flow information between students/lecturers. Visits to different ruminant production systems, WIL - 10% of the credit hours for this course will be allocated to work integrated learning (WIL) – students will evaluate the productivity of a chosen ruminant farm and provide a report of the findings and suggested solutions to the farmer (problem-based learning).
Assessment	Practical reports, Two tests, 2 assignments, WIL report, and examination (1 x 3hr paper)
Credits	16
Pre-requite	None

AS 412	ADVANCED ANIMAL NUTRITION
Objectives	To enable learners to understand recent developments and application of basic nutritionalconcepts for ruminant and non-ruminant livestock production
Course Outline	Detailed consideration of digestion, metabolism, and assimilation of nutrients, Recent advances and developments in basic nutrition Ruminant Nutrition Procedures and theories in beef, dairy, and sheep nutrition, Feeding programs and requirements for lactation, growth, and reproduction, Evaluation of feed resources for ruminant feeding in South Africa, Recent findings in energy, protein and mineral concepts, Selected aspects and concepts of computer diet formulation, The use of computer systems in feeding management, Formulation of rations , Estimation of energy and protein requirements, Specialised nutrition of beef and dairy cattle, and sheep and goats according to production systems, Recent trends in utilization of crop residues and alternative feeds (emphasize costs), Feeding practices for efficient protein utilization, protected proteins, Digestive physiology and nutrient metabolism in ruminants Non-Ruminant Nutrition Recent developments and application of basic nutritional concepts for pig and poultry production, Selected aspects and concepts of computer diet formulation, Fiber digestion in Mono gastric animals, Evaluation of feed, protein, protein quality, Digestion and metabolism of nutrients, Nutritional requirements and current research and feeding programs for poultry and pigs.
Instruction	Lecturing (20%), Student research and present on selected topics (60%), Student to conduct specified. Feed formulation and nutritional analysis practical (Work integrated learning) (20%)
Assessment	Practical reports, Two tests, 2 assignments, WIL report, and examination (1 x 3hr paper)
Credits	14
Pre-requite	None

PS 411	ADVANCED PASTURE MANAGEMENT
Objectives	To enable students to understand the importance of pasture and fodder development, selection of suitable pasture and fodder for different agro- climatic zones, pasture management and pasture conservation. To enable students to understand ecological principles that drive rangeland ecosystem function and structure and adapt them to rangeland management decision and be able topredict the potential. management outcomes
Course Outline	The classification, establishment, maintenance and utilization of cultivated pasture and fodder crop species, Germination principles of fodder plants in pasture cultivation and veld restoration, Suitable fodder crops for planting/cultivating, which include cultivation aspects, choice of crops, quality, quantity, utilization and conservation, Fertility and Nutrient Management, Strategic irrigation of pastures, Insect, Disease and Weed Control, Forage Quality, pasture assessment and pasture allocation, Forage Utilization, Grazing Management Systems and pasture growth, Grazing Management Methods (Feed wedges and rotation planners), Considerations in Developing Grazing Systems, Forage Conservation Techniques and surplus pasture management strategies, Fodder flow planning, Develop a grazing plan, The production potential and quality of pastures as influenced by botanical composition, vegetation cover, livestock grazing and browsing potential, soil chemical, physical and biological conditions in addition to other important environmental processes, Grazing habits of livestock and selective grazing, Determining grazing capacity and stocking rates, Evaluation of grasses and other vegetation types in terms of adaptation, acceptability and adaptability to environmental and management conditions, Determination of veld condition, Developing veld management systems for farms in different veld types, and recommended special treatment depending on veld condition, Causes and results of veld deterioration and associated control measures, Range improvements, Rangeland Monitoring
Instruction	Two lectures per week, Practical: students will work in small groups to collect data on crop growth and development in the field and at the end of the semester all groups will submit and brief research paper on their findings, Student to conduct specified practical from establishment of cultivated pastures up to fodder conservation in surrounding, Student research and present on selected topics, Use of fourth quadrant in pasture allocation.
Assessment	Practical reports, Two tests, 2 assignments, WIL report, and examination (1 x 3hr paper)
Credits	14
Pre-requite	None

FC 411	RESEARCH METHODS & BIOMETRY
Objectives	To provide students with an opportunity to enhance their understanding of the principles andprocesses. of agricultural research
Course Outline	Introduction to Research (Definition, Concepts, Ethics), Research methods (Study the nature of research and the various methods for acquiring information, Quantitative and Qualitative Research), Research design (Concepts of design for experimental investigations, Methods of data collection and organisation), Research proposal development (The identification and definition of a research topic and its rationale, Development of literature review and appropriate literature citation), Experimental design and statistics (Experimental procedures (design), cause and control of experimental error, Experimental layout, complete randomize, randomized complete block, Latin square, split plot designs, single factor and factorial experiments), Applications of statistical estimation and inference, Use of statistical software for data processing, Approaches to Analysing data – analysis of variance, one way and multiple ways classification, regression analysis, correlation analysis, mean comparison techniques, Analysis of variance, one way and multiple ways classification; factor experiments, split-plot designs and analysis of results. Regression analysis, correlation analysis, mean comparison techniques, Data interpretation
Instruction	Two lectures per week, Practical: In-class discussions, group activities, and case studies. On their own time, students must complete weekly course readings and written assignments, written assignment in which students will be asked to develop a research proposal on a discipline related topic, Student to practice data analysis from previous research data samples.
Assessment	Written assignment in which students will be asked to develop a research proposal on a discipline related topic. Two tests, 2 assignments, and examination (1 x 3hr paper)
Credits	16
Pre-requite	None

SEMESTER 2

AS 421	ADVANCED NON-RUMINANT PRODUCTION SYSTEMS
Objectives	To provide an understanding of the pig and poultry industries in terms of scale, production systems, industry structure and management factors influencing efficiency of production To facilitate the acquisition of knowledge and understanding of breeding, feeding,management and marketing practices of modern poultry and pig production units
Course Outline	Pig Production Background to South Africa/World pig production, consumption patterns, Industry trends, strengths, weaknesses, opportunities and threats, Industry structure: integration, processing and marketing, Breeding, housing, and feeding strategies, Breed selection and genetic improvement, Outdoor production systems/ Organic systems, Primary pig diseases, Marketing and Quality Assurance, Economics of pig production, targets, and performance indicators. Poultry Production Industry structure, production in world/South Africa and consumption levels, Broiler industry: market requirements, lifecycle, feeding, welfare, physical & financial performance, Egg industry: market requirements, feeding, production system, welfare, physical & financial performance, Indigenous poultry production, Geese and Ostrich production, Free range and or Organic systems, Breed selection and genetic improvement, Primary poultry diseases. General Size, distribution and value of the pig, poultry and other intensive animal industries, Breed selection and genetic improvement in intensive animal production, Practical feeding of breeding and growing animals, Optimisation of reproductive output, Environmental effects, and the use of buildings in intensive animal production, Management regimes to maintain animal health, Animal welfare, Maximization of product output and quality, Analysis of production systems and consideration of alternative
Instruction	Two lectures per week, Practical: Assignment to work at a Farm Livestock Unit, develop and execute Projects to test/compare theory with practice, Discussions with cross flow information between students/lecturers. Visits to different monogastric production systems, WIL - 10% of the credit hours for this course will be allocated to work integrated learning (WIL) – students will evaluate the productivity of a chosen monogastric farm and provide a report of the findings and suggested solutions to the farmer. (Problem-based learning).
Assessment	Practical reports, Two tests, 2 assignments, WIL report, and examination (1 x 3hr paper)
Credits	16
Pre-requite	None

AS 422	ADVANCED ANIMAL BREEDING
Objectives	To give students a basic understanding of modern techniques of genetic evaluation of farm animals, and how genetic differences between individual animals as well as breed differences are utilized to improve animal characteristics in modern production systems.
Course Outline	Population Genetics (Basic definitions, Types of gene action, Gene and genotypic frequencies, Factors affecting gene frequency, Hardy-Weinberg law, Genetic drift, Inbreeding and quantifying population subdivision, Effective population size), Genetic model for quantitative traits (Simply inherited and polygenic traits, Mean and genetic variance for quantitative traits, Genetic value, Breeding value, Gene combination value, Producing ability), Genetic parameters (Components of phenotypic variation, Heritability and repeatability, Estimation of genetic parameters), Genetic evaluations (Prediction of breeding values, BLUP), Selection methods (Selection for single traits, Selection for multiple traits, Selection index), Expected genetic improvement(Selection response, Genetic correlation and correlated response), Mating systems (Inbreeding systems and inbreeding depression, Crossbreeding systems and Heterosis), Genetic improvement schemes (MOET and Progeny testing schemes, Open and closed nucleus schemes), New approaches in animal breeding (Gene detection and gene mapping, Major genes and QTL, Marker assisted selection, Genomic selection)
Instruction	Two lectures per week, Practical: The student estimates heritability; genetic and phenotypic correlation and other parameters, Practical through observing demonstrations of reproductive biotechnologies, the student interprets performance test data and herd profiles; conduct practical selection of breeding stock; evaluate breeding programmes, Written exercises on basic breeding calculations.
Assessment	Two tests, 2 assignments, and examination (1 x 3hr paper)
Credits	16
Pre-requite	None

FC 421	RESEARCH PROJECT
Objectives	To enhance an understanding of students on research project development, implementationand interpretation
Course Outline	The course is based on individual research work, including literature studies according to the study plan. Understanding of research principles and research practices will be developed through the student undertaking a substantive research project normally defined by the academic supervisor. The following are covered during the course: Identification/formulation of problem, Formulation of a research topic, hypothesis and justification, Setting research objectives, Literature review and synthesis, Setting the experiment/study, Defining materials and methods (methodology), Collection and analyse data, Reporting and interpretation of the research results, Drawing conclusions as guided by classical model, pragmatic model or logical model, Develop recommendations as guided by the research results
Instruction	Individual work under supervision. Participation in seminars, or similar activities in the respective scientific environment, reading of scientific literature as recommended by thesupervisor and the student´s own judgment.
Assessment	The assessment consists of a written research report, a written abstract, and a poster presentation
Credits	16
Pre-requite	None

ELECTIVES

AS 423	PROCESSING OF ANIMAL FOOD PRODUCTS
Course Code	
Objectives	To provide students with an in-depth understanding of animal product development, principles and practices, biochemistry, modern technologies used to assess product quality, sensory analysis, and food safety as well as regulations associated with animal products.
Course Outline	Egg processing The Egg Industry Overview, Shell Egg Formation and Structure, Shell Egg Quality, Shell Egg Processing and Composition, Egg handling, storage, and safety. Meat processing The Meat industry overview, Slaughtering Operations and By-products, Carcass evaluation and grading systems, Muscle chemistry pre- and post-mortem, Properties of fresh meat, Palatability of fresh meat, Principles of meat processing, Fresh processed meat products (Cured and smoked products, Emulsified products, Fermented products, Coating products, Restructured meat products), Preservation and storage, Packaging, Legislation, Quality control and hygiene, Effect of processing on the nutritional value of meat products, Meat cookery and cooked meat products. Milk processing The Dairy Industry Overview, Chemistry and physical characteristics and properties of milk, General aspects of milk microbiology, Principles of milk processing (Milk for liquid consumption, fermented dairy products, Concentrated milks, Cream/frozen dairy products), Possible defects, causes and prevention when processing milk products.
Instruction	Two lectures per week, Practical: Preparation of condensed milk, custard, ready-to-eat milk-based desserts, flavored milk beverages, dairy-fruit juice mixtures; ice cream and other frozen desserts; yogurt and cultured milk products; cheeses. Evaluation and analysis of the products. Effect of processing on the nutritional value of dairy products. Factory visits, Manufacturing dried, cured, fermented and emulsion type products. Visits to processing factories.
Assessment	Practical reports, Two tests, 2 assignments, WIL report, and examination (1 x 3hr paper)
Credits	12
Pre-requite	None

AB 421	ADVANCED FARM BUSINESS MANAGEMENT
Course Code	AB421
Objectives	Integrate management, finance, operations, and risk concepts required to successfully manage a farm business, provide an understanding of decision-making methods and tools used for farm business decisions, provide insights into the ingredients that make up outstanding farm management and entrepreneurship, Improve students' critical thinking skills.
Course Outline	Introduction-Farm Business Management (Definition and theoretical background and importance), Functions of Management (Planning, implementation, organizing and control), Record Management, Managing Risk and Uncertainty, Credit Management, Managing Income Taxes, Agricultural aspects of commercial law.
Instruction	Two lectures per week, 1 Practical session and/or tutorial per week (students will visit the farms and assist farmers in record keeping, drawing financial statements, decision making from those financial statements, analysis of investment portfolio, use of laws usable documents), 10% of the credit hours for this course will be allocated to work integrated learning (WIL) – relevant aspects will include Communication, recording, monitoring, and mentoring systems.
Assessment	Practical reports, Assignments, oral presentations, WIL report, two tests and three-hourfinal examination paper.
Credits	12
Pre-requite	None

AX 421	ADVANCED AGRICULTURAL EXTENSION
Objectives	To introduce students to various extension approaches and methods that will help them to effectively interact with the farming community, initiate capacity development, undertake planning, monitoring and evaluation of extension programmes To provide students with an understanding of the roles of agricultural extension in rural development to enable students to design, develop and execute context-specific and community tailored extension projects/programmes, following the principles of participatory development which fosters community involvement and impact.
Course Outline	The concept of extension, aims, functions, and principles, Organisation and management structure of extension in South Africa, Human behavior, decision making and behavioral change (adoption of technologies), Environmental factors and technology adoption, Group dynamics, rural leadership and community facilitation (participatory extension approaches), Extension programme planning, execution, monitoring and evaluation, Gender issues in extension, applied rural sociology (social and cultural factors), Adult learning as it relates to extension.
Instruction	2 lectures per week, self -study/independent study, group discussions, case studies 1 practical per week (including participatory approaches toneeds assessment) -10% of the credit hours for this course will be allocated to work integrated learning (WIL) – relevant.
	aspects will include communication, recording, monitoring and mentoring systems
Assessment	Practical reports, Assignments, presentations, WIL report, two tests and three-hour finalexamination Paper
Credits	12
Pre-requite	None

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AGRICULTURE & FORESTRY
TRAINING INSTITUTE

ADVANCED DIPLOMA IN HORTICULTURE

ADVANCED DIPLOMA IN HORTICULTURE

1	Plant propagation	HS411		12
2	Tropical & Sub-Tropical fruit trees production	HS412		12
3	Advanced Vegetable production	HS413		12
4	Advanced Soil Fertility and Plant Nutrition	SS411		12
5	Research methods	FC111		8
Total Semester 1 Credits				56
6	Temperate and Berry fruit trees production	HS421		12
7	Post -harvest Handling, Physiology & Technology	HS422		12
8	Landscape and Ornamental Garden design	HS423		12
9	Research project	FC421		16
Total Semester II Core				52
10	Advanced Farm Business Management	AB421		12
11	Advanced Agricultural Extension	AX421		12
12	Agricultural MIS, GIS and Remote Sensing	AM421		12
Total Semester 2 Credits				60
Total Qualification Credits				120

SEMESTER 1

HS 411	PLANT PROPAGATION
Objectives	To provide students with knowledge and skills to propagation methods commonly utilized inhorticultural plants
Course Outline	Introduction to plant propagation; sexual propagation (by seeds) (principles; seed physiology, seed quality, regulation of germination, techniques); Asexual (vegetative) propagation, plant patent laws, methods: cuttings, buds, layering, specialized stems, and roots, micro- propagation); Nursery Management and culture; Nursery plant production (planning, soil, media and nutrition management & irrigation, insects and disease management, storage facilities, growth media mixes, composting)
Instruction	3 lectures/week; 1 practical/week (seed sowing and germination tests and treatments; asexual propagation (cuttings, layering, tissue culture); After care of seedlings; compostingand growing medium mixes
Assessment	3 hours examination, two tests; two Assignments /practical reports/experimental projects
Credits	12
Pre-requisite	None

HS 412	TROPICAL & SUB -TROPICAL FRUIT TREES PRODUCTION
Objectives	To provide students with knowledge and skills in production practices of selected tropical andsubtropical fruit crops
Course Outline	Industry overview (production areas, types and cultivars, roots stocks, nutritional values, production statistics); Climate and soil requirements; Orchard /plantation layout, planning and establishment; fertilizing young and old trees; problematic/major pests and diseases/diseases of economic importance; orchard sanitation and floor management; irrigation methods; crop manipulation; harvesting and post - harvest handling; marketing (citrus, pineapple, avocado, mango, banana)
Instruction	3 lectures/week; 1 practical /week (post planting care, training and pruning, orchard sanitation, orchard floor management, mixing and applying chemicals for weed, pest and disease control; scouting, fertilizer application, calculations on orchard tree population, fertilizer requirements; excursions; group research projects.
Assessment	2 tests, 2 practical reports/assignment/research project reports; one-3-hour examination,presentations
Credits	12
Pre-requisite	None

HS 413	ADVANCED VEGETABLE PRODUCTION
Objective	To provide students with knowledge and skills in production practices of vegetable crops under diverse environment.
Course Outline	Industry overview (nutritional importance, production areas and statistics); Principles and practices; Classification; Production systems); Conventional vegetable establishment (production planning; crop establishment, crop management practice s Protected environment (greenhouse structures- construction, control of internal environment; irrigation systems; irrigation controllers; Water quality, production systems), Climate Smart vegetable production practices , Indigenous vegetable production Integrated disease, pest and weed management; Marketing systems.
Instruction	3 lectures/week, 1 practical/week (pot and field experiments/projects); excursions; groupwork
Assessment	2 Assignments/practical reports, 2 Tests, one-3-hour examination, presentations
Credits	12
Pre-requisite	None

SS 411	ADVANCED SOIL FERTILITY AND PLANT NUTRITION
Objectives	To demonstrate an understanding in the principles and practices of nutrient management for crop production, and the implications of soil fertility management practices on agricultural sustainability and environmental protection. To be able to apply individual and collective knowledge to solving real world nutrient management and soil fertility problems, and to communicate their recommendations for nutrient management and soil fertility to others.
Course Outline	Current issues on soil fertility and plant nutrition in South Africa; The chemistry of soil colloids: mineral colloids, organic colloids; Basic Soil-plant relationship; Function of inorganic nutrients in plants; Problem soils; Analytical techniques in plants and soils; Soil fertility evaluation; Soil nutrient management; Nutrient- water interaction, The role of soil organisms in plant nutrition; Economics of plant-nutrient use; Fertilizers manufacturing and recommendation.
Instruction	3 lectures/week; 1 practical/week; presentations; group work
Assessment	2 tests, 2 practical reports/assignments; one-3-hour practical examination
Credits	12
Pre-requisite	None

FC 411	RESEARCH METHODS
Objective	To provide students with an understanding of the principles and processes of agricultural research with emphasis on techniques used in identifying problems, forming hypotheses, constructing, and using data- gathering instruments, designing research studies, and employing statistical procedures to analyse data and communicating research findings and outcomes in both oral and written formats.
Course Outline	Introduction to research (definition, concepts, ethics); Research methods (the nature of research and the various methods for acquiring information; quantitative and Qualitative research); Research design; Concepts of design for experimental investigations; Methods of data collection and organization; Research proposal development; The identification and definition of a research topic and its rationale; Development of literature review and appropriate literature citation; Experimental design and statistics; Experimental procedures, cause and control of experimental error; Applications of statistical estimation and inference; Use of statistical software for data processing; Approaches to Analysing data (Analysis of variance, one way and multiple ways classification factor experiments, split-plot designs and analysis of results, regression analysis, correlation analysis, mean comparison techniques); data interpretation
Instruction	In-class discussions, group activities, and case studies; weekly course readingsand written assignments
Assessment	A written assignment in which students will be asked to develop a research proposal on adiscipline related topic.
Credits	8
Pre-requisite	None

SEMESTER 2

HS 421	TEMPERATE & BERRY FRUIT TREES PRODUCTION
Objective	To provide students with knowledge and skills in production practices associated with selected temperate and berry fruit crops
Course Outline	Temperate/ deciduous fruit crops (origin and distribution, classification, principles and practices; insect-pest, diseases and their control; physiological disorder and their control measures; post-harvest management and storage; effect of climate change); Berry fruit cultivation (growth and development, types, cultivar selection, planting. establishment,cultural management practices, major diseases, pests, and their control; Marketing
Instruction	3 lecture/week, practical arranged (orchard floor management, orchard sanitation, scouting, maturity indexing, mixing, and applying chemicals for weed, pest and disease control; fertilizer application, orchard tree population calculations); excursions; group work
Assessment	2 assignments/practical reports; 2 tests; 1 examination (1x3-hour paper)
Credits	12
Pre-requisite	None

HS 422	POST-HARVEST HANDLING, PHYSIOLOGY & TECHNOLOGY
Objective	To provide students with knowledge and skills in pre-harvest and post-harvest physiology, technology of perishable horticultural commodities and practices employed for extending shelf life.
Course Outline	Overview of horticultural crops; Structure of vegetables and fruits ; Primary and secondary metabolites; Maturity indices; Harvesting (manual and mechanical harvesting) & Post-harvest systems ; Post –harvest Physiology and biochemistry; deterioration of horticultural crops (biological and environmental ; pre- harvest and post-harvest factors contributing to post harvest losses ; Post -harvest treatments; Storage and packaging technology ; Processing and preservation technology (minimal, thermal; chemical); Post harvest biotic and abiotic diseases; Safety, quality and regulations
Instruction	3 lectures and 1 practical per week (maturity determinations; laboratory experiments: physiological and biochemical changes under various storage environments; preservation techniques; industry excursions (fresh produce and flower markets, pack houses); presentations; group work.
Assessment	2 major tests, one-3- hour examination, practical/experiment reports, assignments
Credits	12
Pre-requisite	None

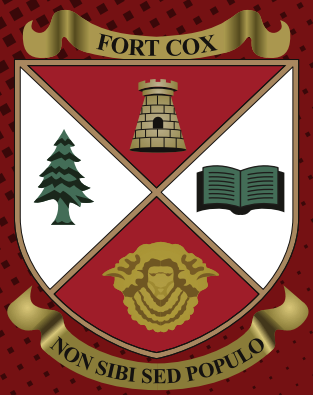
HS 423	LANDSCAPING AND ORNAMENTAL GARDEN DESIGN
Objectives	To provide knowledge in principles and techniques in sound landscaping and design ofornamental gardens
Course Outline	Introduction to landscaping and garden design, history of landscaping and gardens, principles of landscape design; Garden styles and types, plant selection criteria, endangered plant species, garden structures and features, planning, layout and construction of ornamental gardens, permaculture systems (systems, techniques, ecosystems, technologies), irrigation systems and planting, lighting systems, cultural techniques including pruning watering,fertilizing, topdressing, aerating, pest and disease control. Workplace health and Safety
Instruction	3 lectures/week; 1 Practical per week (needs assessment, ornament garden design, garden management practices) - 10% of the credit hours for this course will be allocated to work integrated learning (WIL)
Assessment	Practical reports, 2 tests, 2 assignments and 1 examination (1 x 3hr paper)
Credits	12
Pre-requisite	None

FC 421	RESEARCH PROJECT
Objective	To provide students with knowledge in research project processes from the identification research question or problem statement, formulation of a research topic, research objectives, deductive and inductive), pragmatic model or logical model (logical
Course Outline	Identification/formulation of problem; Formulation of a research topic, hypothesis, and justification; Setting research objectives; Literature review and synthesis; Setting the experiment/study; Defining materials and methods (methodology); Data collection and analysis (e.g., statistical, socio-economical, econometrical, geo-statistical etc.); Reporting and interpretation of the research results; Drawing conclusions as guided by classical model (deductive and inductive), pragmatic model or logical model (logical empiricism); Develop recommendations as guided by the research results; Analysis of research data, as appropriateto the research project undertaken.
Instruction	Each student selects and executes a special research project under a supervisor; oralpresentations
Assessment	Research project report; oral presentations
Credits Pre-requisite	16 None
ELECTIVES - *One elective from the following (12 Credits)*	

AB 421	ADVANCED FARM BUSINESS MANAGEMENT (*elective)*
Objective	To provide students with knowledge and skills to integrate management, finance, operations, and risk concepts required to successfully manage a farm business and an understanding of decision-making methods and tools used for farm business decisions
Course Outline	Introduction to farm business management (definition and theoretical background and importance); Functions of Management (Planning, implementation, organizing and control); Record Management; Managing Risk and Uncertainty; Credit Management; Managing IncomeTaxes; Agricultural aspects of commercial law.
Instruction	3 lectures/week; 1 practical and/or tutorial per week (students will visit the farms and assist farmers in record keeping, drawing financial statements, decision making from those financial statements, analysis of investment portfolio, use of laws usable documents)-10% of the credit hours for this course will be allocated to work integrated learning (WIL) – relevant aspects will include communication, recording, monitoring, and mentoring systems
Assessment	Two major tests, one- 2-hour examination, practical reports/assignments, oral presentations
Credits	12
Pre-requisite	None

AM 421	AGRICULTURAL MIS, GIS & REMOTE SENSING *(elective)*
Objective	To provide students with knowledge and skills in information systems, GIS and remote sensing that assist in planning and decision making in managing agricultural operations
Course Outline	Basic concepts (the strategic role of information systems in the management of agriculture); Information systems and organizations; Computers and information processing; Information systems software; Managing data resources; Telecommunications; Global Positioning System (GPS); An introduction to mapping (GIS) Technologies; Remote sensing; Artificial intelligence; Controlling information systems
Instruction	3 lectures/week; 1 practical/week (GIS laboratory exercises: mapping; area calculations, drone operation); Demonstrations; Excursions
Assessment	Two major tests, one- 3-hour examination, practical reports, assignments
Credits	12
Pre-requisite	None

AX 421	ADVANCED AGRICULTURAL EXTENSION *(elective)*
Objective	To provide students with knowledge in various extension approaches and methods to effectively interact with the farming community, initiate capacity development, undertake planning, monitoring and evaluation of extension programmes
Course Outline	Concepts of extension; Organization and management of agricultural extension in South Africa); human behavior, decision making and behavioral change; Environmental factors and technology adoption; Group dynamics, Rural leadership and community facilitation and participatory extension; Extension programme planning, execution, monitoring and evaluation; Applied rural sociology; Adult education in agricultural extension
Instruction	3 lectures/week, 1 practical/week (visits to farmers days/information days, participatory extension approaches; group work
Assessment	Two major tests, one 3-hour examination paper, presentations, and assignments
Credits	12
Pre-requisite	None



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TRAINING INSTITUTE

ADVANCED DIPLOMA IN FORESTRY MANAGEMENT

ADVANCED DIPLOMA IN FORESTRY MANAGEMENT

1	Tree improvement	FM411		16
2	Forest management III	FM412		16
3	Forestry GIS and Remote Sensing	FM413		16
4	Research Methods	FC411		12
Total Semester 1 Credits				60
5	Forest costing and budgeting	FM421		16
6	Forest Development	CF421		16
7	Research Project	FC421		16
8	Project Management	AB422		12
Total Semester 2 Credits				60
Total Qualification Credits				120

SEMESTER 1

FM 411	TREE IMPROVEMENT
Objectives	The learners should be able to: Select and manage various tree regeneration materials.
Course outline	Genetic diversity and variation, and objectives of biodiversity conservation at the national level; Provenances, plus tree selection and development of landraces; The role of tree improvement in afforestation: yield and forest health; Genotype-environment interaction. Breeding strategies and breeding populations; Seed orchards and breeding seedling orchards: location, establishment, and management; Seed quality, yield variation, harvesting and storage; Traditional plant propagation and new biotechnology techniques. Clonal forestry, and Design and/or achievement of mating, fecundity, hybridization, heritability, compatibility, controlled-pollination, cross-pollination, outcrossing, back-crossing,full- and half-sib material.
Instruction	Lectures, practical sessions, and field visits. 10% of the credit hours for this course will be allocated to work integrated learning (WIL) – relevant aspects will include communication, recording, monitoring and mentoring systems
Assessment	Assignments, WIL report, Tests and Examination (3-hour paper).
Credits	16
Pre-requisite	None

FM 412	FOREST MANAGEMENT III
Objectives	The learners should be able to plan forest development, yield regulation and utilization for multiple objectives on a sustainable basis.
Course outline	Characteristics of sustainable forest management, Principles of forest management and their application, Forest management planning, Forestry inventory, forest resources inventories for sustainable forest management, types and objectives of forest inventories, Forest growth and yield, Diagnostic sampling, Forest management operations, and Review of forest management activities.
Instruction	Lectures, practical sessions, and field visits
	10% of the credit hours for this course will be allocated to work integrated learning (WIL) –relevant aspects will include. communication, recording, monitoring, and mentoring systems
Assessment	Assignments, WIL report, Tests and Examination (3-hour paper).
Credits	16
Pre-requisite	None

FM413	FORESTRY GEOGRAPHIC INFORMATION SYSTEMS AND REMOTE SENSING
Objectives	The learners should be able to Introduction to remote sensing and GIS; Obtain and Integrate data from disparate sources to a GIS system; Import data from Microsoft Excel into a GIS; Integrate global positioning system (GPS) data into a GIS; Manage GIS data in a GIS system; Overlay spatial features and perform simple GIS analysis; Perform proximity analysis using buffering features to fixed and variable widths; Develop and present maps and layout using Quantum GIS, and; Apply GIS to solve simple practical problems in forestry.
Course outline	Planning for a GIS system and its installation; Working with a GIS software: digitizing maps and relating to GPS inputs; Handling GIS data: – importing/amalgamation and editing tables in GIS, and GPS data collection and retrieval.
Instruction	Case studies, laboratory practical and lectures
Assessment	Assignments, Tests and Examination (3-hour paper).
Credits	16
Pre-requisite	None

FC411	RESEARCH METHODS
Objectives	This course will provide students with an opportunity to enhance their understanding of the principles and processes of agricultural research. Emphasis will be placed on techniques used in identifying problems, forming hypotheses, constructing, and using data-gathering instruments, designing research studies, and employing statistical procedures to analyse data and communicating research findings and outcomes in both oral and written formats.
Course outline	Introduction to Research Definition, Concepts, Ethics; Research methods; Study the nature of research and the various methods for acquiring information; Quantitative and Qualitative Research; Research design; Concepts of design for experimental investigations; Methods of data collection and organization; Research proposal development; The identification and definition of a research topic and its rationale; Development of literature review and appropriate literature citation; Experimental design and statistics; Experimental procedures, cause and control of experimental error; Applications of statistical estimation and inference; Use of statistical software for data processing; Approaches to analyzing data; Analysis of variance, one way and multiple ways classification; factor experiments, split-plot designs and analysis of results; Regression analysis, correlation analysis, Mean comparison techniques. Data interpretation.
Instruction	In-class discussions, group activities, and case studies. On their own time, students must complete weekly course readings and
	written assignments
Assessment	A written assignment in which students will be asked to develop a research proposal on adiscipline related topic.
Credits	12
Pre-requisite	None

SEMESTER 2

FM421	FOREST COSTING AND BUDGETING
Objectives	The learners should be able to plan and schedule operational activities; produce materials and labor unit budget; forecast expenditures and revenues, and cost and control expenditure and input resources in operations at the forest level.
Use outline	Forest operation costing and budgeting, Use of spreadsheets in forestry as a planning tool for work quantification, scheduling and progress monitoring, Building data sheets: operational cost elements, Assessment of standard tasks and standard costs, Method study, labor/machine utilization, Problem analysis tools: cause-effect diagrams and flowcharts, Machinery replacement, depreciation and hiring/ownership costs, Financing choices and economic costing, Inventory control: economic order quantity and upper/lower controls, Sensitivity analysis: cost minimization/profit maximization, Activity based costing (ABC), zero budgeting, break-even analysis, Costing operational plans for a forest management unit (FMU): calculation of labour, equipment and time requirements for an annual plan of operations (APO), Analyses of operational cost data using graphs and pivot tables, Production budget and cost/revenue budget variance analysis, and Business performance and the strategic business unit concepts.
Instruction	Lecturers, practicals, case study. 10% of the credit hours for this course will be allocated to work integrated learning (WIL) – relevant aspects will include communication, recording, monitoring and mentoring systems
Assessment	Assignments, WIL report, Tests and Examination (3-hour paper).
Credits	16
Pre-requisite	None

CF421	FOREST DEVELOPMENT III
Objectives	The learners should be able to demonstrate proper application of national and regional forestry related policies and legislation
Course Outline	Economic development context, Forest development proposals, Management of forest property associations, Interpretation of environmental impact assessment report and directives, Checking compliance of new forest development projects, Preparation for forest certification, and, Responding to corrective action requests (CARs) in audit reports.
Instruction	Lectures, practical sessions, and field visits 10% of the credit hours for this course will be allocated to work integrated learning (WIL) – relevant aspects will include communication, recording, monitoring, and mentoring systems
Assessment	Assignments, WIL report, Tests and Examination (3-hour paper).
Credits	16
Pre-requite	None

FC421	RESEARCH PROJECT
Objectives	The learners should be able to: Identify/formulate the research question or problem statement, Formulate a research topic, hypothesis and justification, Set specific, measurable, accurate, realistic and time-frame based research objectives, Review literature and synthesize it in line with the set topic and outlined objectives and be able to determine information gap, Set the experiment/study through defining materials and methods (methodology), collect and analyses data through academically acceptable methods (e.g. statistical, socio-economical, econometrical, geo-statistical etc.), Report and discuss the research results, Draw conclusions as guided by classical model (abductive, deductive and inductive), pragmatic model or logical model (logical empiricism), Develop recommendations as guided by the research results at least to address knowledge/information gap, policy reference, or practice improvement proposals, affirmations etc.
Course outline	Identification/formulation of problem, Formulation of a research topic, hypothesis and justification, Setting research objectives, Literature review and synthesis, Setting the experiment/study, Defining materials and methods (methodology), Data collection and analysis (e.g. statistical, socio-economical, econometrical, geo- statistical etc.), Reporting and interpretation of the research results, Drawing conclusions as guided by classical model (deductive and inductive), pragmatic model or logical model (logical empiricism), Develop recommendations as guided by the research results Analysis of research data, as appropriate to the research project undertaken.
Instruction	Each student selects and executes a special project under a supervisor. Duration of the project is 2 semesters
Assessment	Submission of research project report, Oral presentation
Credits	16
Pre-requisite	None

AB422	PROJECT MANAGEMENT
Objectives	The learners should be able:
	To provide practical understanding of the principles and techniques of project management as a fundamental management tool in matching scarce resources with ever-tight deadlines
Course outline	History, Economic principles of project management, Project selection, Project lifecycle, Workbreakdown structure, Critical path analysis and optimization, Management techniques, Effective project control.
Instruction	lectures/week, tutorials (project proposal, project planning, project monitoring and evaluation)
Assessment	Assignments, Tests and Examination (3-hour paper).
Credits	12
Pre-requisite	None

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

GENERAL RULES & REGULATIONS

REGISTRATION AND FEES

GC1 REGISTRATION

1.1. Registration as student at Institute

i. The Council may, for registration for any specific course of study at the Institute, require that a specific grade in any specific subject shall have been attained at the standard 10 examination or its equivalent.

ii. A person shall be registered as a student at the Institute for one semester of study (unless the Council has determined otherwise) and after the expiry of that semester of study, that person shall, if he or she desires to remain a student at the Institute, renew his or her registration.

iii. The Council may, for registration for any specific course of study at the Institute, require that a specific grade in any specific subject shall be attained at the standard 10 (grade 12) examination or its equivalent.

iv. The Council may, after consultation with the Academic Board and with the prior approval of the MEC for Department of Agriculture, limit the number of persons to be permitted to register for any course, in which case the Academic Board may select the persons who shall be permitted to register for such course.

v. The Council may, on the recommendation of the Academic Board, recognize as equivalent to an examination required as a necessary qualification by the Council an examination which has been passed by any person at any other educational institution regarded by the Council as the equal of the Institute. Provided such a person shall at least be successful in the examination of the two semesters of the final year of study at the Institute.

1.2. Refusal of student registration

The Council may, without advancing any reasons, refuse to register any person as a student at the Institute if the Council considers it to be in the interests of the Institute to do so.

1.3. Discipline at places of residences of students

i. A student at the Institute shall be subject to disciplinary measures as may be prescribed in rules made by the Council.

vi. The Academic Board may require a student to reside at a place of residence approved by the Council for the duration of his stay at the Institute.

1.4. Financial assistance to students

The MEC for Department of Agriculture (DoA) may, out of monies, be lawfully appropriate for the purposes and subject to such conditions as he/she may determine with the concurrence of the Treasury, grant to a student at the Institute such financial assistance as he/she (the MEC) may deem appropriate.

1.5. Fees paid by student

The fees payable by a student or a prospective student at the Institute shall be determined by the:

- Academic Board with the approval of the Council.
- He or she obtained any qualification, whether of an academic or practical nature, recognized by the Council as adequate for the purpose of registration for any particular course of study, and
- He or she complies with such general requirements of admission as may be prescribed by Council by regulation, and
- He or she complies with such other requirements as the Council may in his case determine, and
- He or she pays fees as prescribed by the Institute fees booklets.

1.6. Admission procedure

The minimum academic requirement for entrance to the Institute is a SENIOR CERTIFICATE or equivalent qualification, with an overall standard grade pass and a minimum of 40 points using Swedish Rating. In addition, a student must have, English with a Higher-Grade E, Mathematics with a minimum Higher-Grade E or Standard Grade D, one of the following subjects with a minimum Higher-Grade E or Standard Grade D (Biology, Physical Science, and Geography). For students who completed their grade 12 after 2009 going forward. The minimum requirement is 24 Admission Points Score system (APS) with the following conditions: -

- Two of the following subjects at level 3 (40% -49%)
- Life Sciences, Agricultural Sciences, Physical Sciences and Geography.
- English is compulsory at least level 3 (40% -49%).
- Mathematics (Core Math's) or Math's Literacy is compulsory at least level 3 (40% - 49%).
- Not more than one subject at level 1 (0% to 29%).
- Any other subjects from the designated list meet the above requirements.

1.7. Registration procedure

a. No person registered as a student at the Institute for a Diploma unless he has complied with the provision of section 1.1 above.

b. Every person registered as a student at the Institute shall be registered for one semester of study, and after the expiry of such semester of study, such person shall, if he wishes to remain a student at the Institute, renew his registration.

c. Registration will take place at the Student Services Unit. Only applicants in possession of

admission notification will be considered.

d. Students arriving after the registration date and time will only be admitted under exceptional circumstances.
e. No student will attend classes if she/he has not fully registered and paid registration fees.
f. The registration form must be properly completed and signed by the student, the appropriate head of department, accounting clerk and student affairs officer or senior examinations officer.

1.8. Cancellation of registration

a. Students who wish to cancel their registration for any reason whatsoever must notify the Principal immediately in writing of their intention.
b. Letters of cancellation will be acknowledged by the Principal & CEO; students should therefore leave a forwarding address with the Principal for this purpose.
c. It is the responsibility of the student to submit proof, if required, of his/her cancellation of registration.
d. No cancellation will be considered after the closing date has lapsed according to the Institute calendar.
e. Refer to section 2.4 regarding the conditions under which fees may be refunded.

2.1. PRESCRIBED FEES FOR 2026

The fees must be paid on or before the registration day of each semester as indicated in the Institute diary for 2026

Programme	Item	Frequency	Fees
Diploma	Minimum Initial payment	Per Semester	R 5,000.00
	Tuition – 8 Credits	Each	R 1,170.00
	Tuition – 10 Credits	Each	R 1,460.00
	Tuition – 12 Credits	Each	R 1,750.00
	Tuition – 16 Credits	Each	R 3,560.00
	Accommodation	Per Semester	R 5,570.00
	Meals	Per Semester	R 9,050.00
Other Fees	Registration fee Sport and Recreation Medical Expenses Student Card	Per Semester Per Semester Per Semester Per Semester	R 2,000.00 R 930.00 R 55.00 R 55.00
TOTAL FEES	**DIPLOMA**	**Per Semester**	**R 26,500.00**
		Per annum	**R 53,000.00**
Diploma: EXP: Training	Tuition: 30 credits Tuition: 60 credits	Per Semester Per Semester	R 3,710.00 R 7,950.00
Advanced Diploma	Tuition – 8 Credits	Each	R 1,781.00
	Tuition – 12 Credits	Each	R 2,671 .00
	Tuition – 14 Credits	Each	R 3, 116.00
	Tuition – 16 Credits	Each	R 3.562.00
TOTAL FEES	**ADVANCED DIPLOMA**	**Per Annum**	**R 26,715.00**

NOTE: Tuition fees will vary according to the programs, semesters, and year levels as determined by the approved fee structure.

- Minimum Initial payment for accommodation for New Student Residence is 50% on registration and the remaining balance is payable in 2 equal installments before the end of each semester

FEES PAYMENT SCHEDULE

	DIPLOMA	DIPLOMA
March 31st	First 50% of Tuition fee (per semester)	First 50% of Tuition fee (per semester)
	First 50% of Accommodation fee	First 50% of Accommodation fee
May 30th	Remaining 50% of Tuition fee	Remaining 50% of Tuition fee
	Remaining 50% of Accommodation fee	Remaining 50% of Accommodation fee
SECOND SEMESTER		
September 03rd	First 50% of Tuition fee (per semester)	First 50% of Tuition fee (per semester)
	First 50% of Accommodation fee	First 50% of Accommodation fee
November 15th	Remaining 50% of Tuition fee	Remaining 50% of Tuition fee
	Remaining 50% of Accommodation fee	Remaining 50% of Accommodation fee

NOTE: The total fee per semester shall be determined during registration as it will be determined by the Programme, semester, and year levels. Furthermore, the fees given in this booklet exclude textbooks, stationery, and photocopying costs which the student will incur during the academic year.
Fees are determined by the Council after consultation with the student representative council and changes are affected timeously.

VERY IMPORTANT

Students failing to honor the fee payment obligation as stipulated on the payment schedule above, shall not:

a) Be permitted to participate in Institute activities including attending classes, sports, using Institute transport.
b) Be permitted to write examinations.
c) get the results and
d) get his/her Diploma after completion of studies

Furthermore, failure to observe the above payment dates will result in interest being charged at prime + 2%.

FEES TO BE PAID TO:

Fort Cox Institute

Bank	:	First National Bank
Branch	:	King Williams Town
Branch code	:	210519
Account no.	:	62050319245
Reference	:	Student no.

MEALS

Meals are not provided to students therefore students should cook their meals in designated areas provided by the institute.

AD HOC PAYMENTS FOR MEALS

Ad hoc meals can be accessed via student debtors' section at the following rates.
Meals: R450 (3 meals per day) Centre for Entrepreneurship Incubation and Rural Development (CEIRD): R400

Experiential Learning Fees:

Minimum Initial Payment for experiential training shall be R4 000.00. Experience runs for a period of 12 months.
The remaining balance is to be paid according to fees payment schedule above.

2.2. ADDITIONAL CHARGES TO ALL STUDENTS

(a) Once-off payment by new students' indemnity fee: An indemnity deposit of R250.00 is payable by all new students on first registration. This deposit will be treated as security against damage to the property of the Institute and may also be used to offset monies owed by the student upon departure. This amount is refundable when the student finally leaves the Institute provided the costs to repair any damage to Institute property have been made good by the responsible student.

(b) Late registration fee: Students who register after the closing date of registration day will be required to pay an extra R200.00 as a late registration fee. This amount is payable irrespective of circumstances that have caused the student to be late for registration.

2.3. OTHER FEES

a) Special Aegrotat or supplementary examination – R200.00 per subject.
b) Re-examination without attending lectures – R250.00 per subject.
c) Students repeating a semester, regardless of the number of subjects registered, will have to pay full fees as in section 2.1 above.
d) Transcript of academic record – R100.00.
e) Re-scrutiny of scripts – R200.00 per paper.
f) Re-marking of scripts – R300.00 per paper.
g) Library: Lost/damaged books: Compensation to the value of the original price of a lot/damaged book or an amount determined by the Institute will be payable by a borrower who is unable to substitute a bibliographically identical copy of the same book.
h) Graduation in absentia fees – R2 000.00
i) Certificate fees – R500.00

Note regarding Advanced Diploma Programme:

1. Application Fee: R300 payable on/ before registration.
2. Minimum initial payment: R4000
3. Contact teaching is for over 2 x 2 weeks a semester.
4. Distance contact will continue through online classes (Moodle, and Emails)
5. Students are required to organize their accommodation when attending contact classes.

Note: The Institute Reserves the Right to Amend these Fees without Notice

REFUND OF FEES

a) Students who are admitted to the Institute and sign the registration form and the undertaking therein shall be liable for the full fees for the academic semester in question.
b) Refund for fees may be granted by the Principal & CEO in the following cases:
   i. Students who cancel their registration during the first semester will be considered for a refund for the second semester only.
   ii. In the event of a written notice of cancellation of registration being received before the late registration date, and after the normal registration date, a full refund of fees (except the registration fee) for the semester paid will be considered.
   iii. In the event of written notice of cancellation of registration being received after the late registration date, no refund will be made for the semester in which the cancellation is received.
   iv. A student whose registration is cancelled by the Institute as a result of disciplinary measures taken by the Principal and CEO or any appropriate Institute authority, will not qualify for remission of fees. The registration fee will under no circumstances be refunded.

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

ACCOMADATION & RESIDENCE RULES & REGULATIONS

RESIDENCE RULES AND REGULATIONS

RC1 INTRODUCTION

Fort Cox Agriculture and Forestry Training Institute recognizes that living within a student residence (hostel) setting can be one of the most rewarding experiences of a student's time within the Institute. The interaction between students within the residences helps develop competencies in all aspects of leadership, promotes cross-cultural communication, shapes the Fort Cox student community into one coherent unit and allows for enhanced learning opportunities.

The student residences at Fort Cox can house 289 students, The residences vary in size and layout, but there are two categories:

- Male residence and.
- Female residence

RC2 ADMISSION TO STUDENT RESIDENCE

Admission Procedure

Fort Cox Agriculture and Forestry Training Institute is a residence Institute, that is, all students who have been admitted as full-time students would ideally reside in the Institute's provided student accommodation. To benefit from such residence a student will be considered after providing proof of registration.

A student wishing to reside in Institute residences must complete and submit, to the residence management, an application form for accommodation in the year prior to the year in which the accommodation is required. Application forms must be completed in all respects and in the case of minor students, must be countersigned by the parent or legal guardian. **Students who are studying 1 or 2 courses will not be given preference in hostel accommodation.**

Applicants should not come to the institute until they have proof of admission.

- An indemnity deposit, the amount of which is stated under GC2 FEES must be paid prior to admission to the residence for any damage that may be caused to the building, furniture and fittings or the loss of Institute owned property by yourself. This indemnity deposit will only be refunded on request after completion of studies, provided that one is not liable for any outstanding amounts or has been charged for such damages.
- If this indemnity deposit is not claimed back within six (6) months of the completion of your studies, it will be forfeited.
- On admission to the residence, the student, together with a member of the residence staff must inspect the rooms immediately and complete an appropriate report form relating to the condition of the room and bathroom when the student vacates the residence at the end of each semester.

RC3 RESIDENCE MANAGEMENT AND ADMINISTRATION

The Institute residences are managed and administered by two Wardens, one each for the female and maleresidence.
The duties of the wardens are: -

- To address the residence daily issues raised by students,
- Allocation of rooms to students and potential users,
- Ensuring cleanliness in and around the hostels,
- Ensuring that the student rooms, common rooms, bathrooms, and all other areas are in good condition and arrange for the necessary maintenance,
- Attending student problems and giving counselling were necessary,
- Maintain discipline in the hostels,
- Liaise with the catering team and SRC regarding student meals,
- Plan hostel activities,
- Hold regular meetings with the students to keep students and staff informed.

Wardens, by virtue of their position, are members of the disciplinary committee and may attend to minor disciplinary offences.

WHAT IS EACH RESIDENCE LIKE?

Male residence

The Male residences consist of four single units, Red, Green, Yellow and Blue blocks. Each pair of single hostel units (red & green) and (yellow & blue) are joined together by a common room, which has a Television for the use of the students residing in that pair of hostels. Each pair of male residence units can accommodate 44 students, (a total of 88 students) two students each in separate flats, eight students in single rooms and thirty-four students in double rooms (two students sharing).

Female residence

The Female residence can accommodate 105 students in four single units. Each room in this complex is subdivided into either three or four cubicles, thus providing a large degree of privacy for each student residing therein. A common room with a Television is situated in the middle of the complex for the use of students.

Room sharing

Sharing a room with another student promotes the spirit of sharing and friendship. This newfound friendship could provide you with a companion with whom to share your old and new experiences. Mutual respect is fundamental in ensuring that time at the Institute is enriching and memorable.

What to expect in your room?

- Bed and Mattress
- Curtains
- Study desk, study lamp and a chair

Hygiene

It is the responsibility of a student to clean their rooms and to always keep them neat and tidy. Bathrooms are cleaned regularly, but one should always exercise cleanliness.

Room keys

Each student is given a key to his/her room. It is the responsibility of the student to always look after those keys.

RC4 PERSONAL MAIL, TELEPHONE CALLS AND MESSAGES

Personal mail

A student may have personal mail addressed to the Institute. Addresses on letters should clearly state the residence unit and room number. Mail can be collected from the wardens. The Institute is not responsible for forwarding personal mail received for students who are no longer residents at the Institute.

Telephone calls

A student may not receive telephone calls at the Administration building, Warden's office, Security control room, or any other Official Institute telephone except in case of an emergency.

Messages

Students will not be called out of classes for visitors except in case of an emergency. Messages may be posted on the student notice boards situated outside the dining hall, library, and student affairs office.

Fires

In the event of a fire: -

- Remain calm.
- Leave the building.
- Do not waste time collect personal belongings.
- Raise the alarm.
- Proceed to the fire assembly points.

Meals

Not all meals are provided for students, catering for all students. Meals are only provided at special events.

RC5 INSTITUTE VACATION

During the winter and summer vacations, you are required to vacate your room, take all your possessions with you, and leave the Institute. When leaving the hostel during vacations, you may be required to fill in the register, stating the date and time of departure, holiday address as well as the expected date and time of return.
During the short semester vacations, you may remain in residence only after necessary arrangements are made with the Warden and signing appropriate documentation provided for this purpose.

RC6 STUDENT ORGANISATIONS

All student organizations operating on campus should be officially recognized by the Institute as stipulated in the rules and regulations of the Institute.
One such organization or body is the Student Representative Council (S.R.C.), which is the executive committee of the student body formed according to the Institute S.R.C. Constitution.

All student requests and requirements should ideally be channeled through the S.R.C. for administration. This, however, does not infringe on the rights of an individual student or organization to represent itself/himself/herself to the administration on a personal matter. Student organizations are welcome to participate but are regulated so as to ensure good governance.

RC7 SECURITY AND SAFETY ON CAMPUS

Security on campus is provided by a security service provider contracted by the Institute to ensure safety during your stay at Fort Cox. However, students are advised to always observe normal security precautions. These include:

- Always keep your door locked.
- Report any missing keys to the Warden.
- Registering all guests at the security office at the Main Gate.
- Security officers are available to assist you in case of emergencies.
- Security officers have got access to search for any hostel when the need arise.

RC8 STUDENT HEALTH SERVICES

a. Primary health care

i. Treatment for minor ailments and contraceptives are provided at the campus clinic by our Professional Nurse.

ii. The Institute also provides transportation to the local clinic for major ailments to the hospital on request.

iii. Students who are not feeling well should report to Professional Nurse and Wardens.

iv. The clinic following hours:

v. Weekdays.

08h00 -16 30
From 16H30 weekdays the Nurse is on standby.
Saturday, Sunday and Public Holidays Warden/Matron are assisting on transportation of students to the clinic. Saturdays, Sundays, and public holidays are closed

NB: ONLY EMERGENCIES WILL BE ATTENDED BY THE PROFESSIONAL NURSE AFTER HOURS

a. Emergency procedure

Besides referring cases to the Professional Nurse, cases, Warden is assigned a vehicle on standby to facilitate emergency transportation. In such cases of emergency, the Warden should be contacted, or the Security Officer manning the Main Gate, who will in turn contact the relevant person.

b. Referral to hospital

i. A student may not refer himself/herself to the clinic or hospital outside of the campus. Such referrals are done by the Nurse after attending to the student or someone acting on her instruction.

ii. In case of chronic treatments not available at the Institute Clinic, the Nurse should be informed three days before the intended visit for further transport arrangements to be done.

c. Payment at the hospital or clinic

When visiting either the clinic or hospital one should bring along their student card. Failure to do that will result in the student being treated as an Outpatient and necessary fees will be charged as prescribed by the Health Services.

d. Pregnancy procedure

Any student who falls pregnant discovers such pregnancy or has reason to believe the existence of pregnancy is required to inform the Professional Nurse as soon as possible. Failure to do so will be regarded as an act of misconduct. The Nurse is trained to offer guidance and counselling on such matters. A student who is pregnant may be permitted to remain in the residence up to the sixth month only, unless under special permission to do so from the Principal and CEO, thereafter the student should leave the Institute residence. The Institute policy recognizes the rights accorded to everyone under the Constitution but reserves the right to make or refuse arrangements to facilitate continued learning in the later stages of one's pregnancy.

Counseling services

Counselling Services are provided within the institute, and students are referred for further consultation to the Department of Social Development at Middledrift.

RC9 STUDENT RESIDENCE

9.1. RESIDENCE COMMITTEE

a. There shall be Residents Committees for the Female and Male residences consisting of: -

i. The Warden (Chairperson), Resident Authority, S.R.C. member and one resident elected from each unit are responsible for providing additional care and aiding the Nurse,

ii. The students in each residence unit may elect a representative (Hostel Rep.) to serve on the Residence Committee.

iii. This Residence Committee would ensure the preservation of high morals and the maintenance of an acceptable standard of conduct in the residences and see to the development and maintenance of a sound and harmonious spirit in the residence unit in general.

iv. The Hostel Representative (Hostel Rep.) without infringing upon the authority of Wardens, may assist in ensuring that residence rules are adhered to and that good order and conduct generally is maintained.

v. The Hostel Rep. and S.R.C. members will act as an intermediary between students and Wardens. This is without prejudice to the rights of Warden to deal directly with a student or general body of students in the residence, nor with the right of any student to approach Warden directly.

vi. The Residence Committee through the Student Welfare Manager may make a presentation to the Deputy Principal to have residence rules reformed or to introduce new rules. This representation should be in writing and well-motivated.

9.2. RESIDENCE OCCUPATION

a. All students must be present at the opening of the Institute, at the beginning of each semester or the commencement date after such semester breaks, unless permission for late arrival has been obtained beforehand from the Principal & CEO or his representative.
b. Should a student wish to absent himself or herself from the Institute campus it is his/her duty to notify the Warden of his/her residence in advance and fill in the prescribed form or register.
c. Should a student fail to be admitted to the examinations on account of poor academic progress during the course of the semester, he/she shall vacate the residence at the closure of lectures. Such students shall not be entitled to any refund of fees.
d. A student remaining in residence during the vacation, as outlined in 5. Above, shall pay the prescribed residence fee for the vacation time spent in the residence.
e. No Personal belongings may be left in the residence during vacations.

9.3. INSTITUTE PROPERTY

a. Students are responsible for the safekeeping of such fixed and movable property within their rooms, bathrooms, common rooms and all other areas of residences. Failing to do so will result in hostel administration enforcing disciplinary measures.
b. Students are expected to ensure that their rooms are neat and tidy at all times. No pictures or papers may be affixed to walls, doors and furniture.
c. Common rooms and/or dining hall furniture should be handled with care and tables and chairs may not be removed.
d. The Televisions in common rooms shall be used with care, and the safekeeping of remote controls shall be the responsibility of the Assistant Warden.
e. Common room and passage appliances and electrical fittings are not to be used for purposes other than those for which they are intended.
f. The use of personal electrical heaters and electrical appliances (**kettles, hot plates, toasters, etc**.) within the room or passage plugs, is strictly forbidden, as is any tampering with electrical wiring.
g. Any item found illegally connected or plugged into the power sockets will be confiscated and returned to the student at the end of the semester when the student leaves the Institute. A student wishing to get further clarity on the permissibility of use of a personal powered device should consult with the warden.
h. Cooking is not allowed in hostels.
i. When the Institute discovers and repairs any damages to a student room and the cost thereof will be recovered from the student concerned
j. Willfully ill-treatment or damage of property is a serious transgression. The students will be fully liable for the costs and will further face disciplinary action.

It includes, but is not limited to:
The damage of doors, windowpanes, chairs and any other furniture or equipment of the hostels; The irresponsible discarding of cigarette buds.

The breaking of bottles and glasses, etc.

9.4. ROOM KEYS

a. The Warden/Matron will give out room keys to the students on arrival; such keys should be returned to them when leaving the Institute at the end of each semester or on cancellation of registration. If this is not done, the student's account will be debited with a lock replacement at the prescribed cost.
b. A student who loses a key must report the loss to the Institute Warden/ Matron or any person delegated, and such student will be responsible for the replacement thereof.

9.5. DISRUPTIVE NOISE

a. Radios and music players and any other sound devices disrupt learning and studies, and such care should be taken to ensure they are not too loud or disturb other students.
b. In the event that excessive noises are witnessed, the Institute shall confiscate any such devices for the duration of the semester. The offending student would be charged with misconduct.
c. Students should always practice self-control, and refrain from actions (singing, shouting etc.) which may disrupt the residence community in any way.

9.6 SMOKING

The Tobacco Product Control Act 12 of 1999 prohibits smoking in public places; therefore, it is against the law to smoke in any building on campus. Students are advised to observe this legislation and failure to observe and abide by this will be deemed an act of misconduct.

9.7. STUDENT MEETINGS

a. Any student organization gathering or activity is subject to the prior approval of the Student

Welfare Manager. No such student activities may take place before the registration date.

b. Prior approval of the Student Welfare Manager, or his/her authorized representative, must be obtained for the holding of student meetings, as well as meetings of an approved student club or society in terms of the approved constitution of the club or society concerned. The Student Welfare Manager may delegate this function to a recognized student authority.

c. Student meetings, rehearsals and functions may not go beyond midnight unless with the special permission of the Principal or his/her delegated representative.

d. If a student or a group of students from another institution, or a person not under the jurisdiction of the Institute, wishes to visit the Institute as a guest of any student or student organization, prior consent of the Student Welfare Manager must be obtained.

e. Any student or group of students wishing to visit another institution must obtain written consent from the Student Welfare Manager well in advance.

f. Failure to observe the above stipulations would be regarded as an act of misconduct by the student, group of students or student organization.

9.8. FIRE EQUIPMENT

a. Use of flammable substances such as paraffin is strictly forbidden.

b. Fire hoses, extinguishers and alarms are not to be used for any purpose, other than firefighting. Any damage to firefighting equipment will be repaired by the Institute and the cost recovered from the student/s concerned.

c. The use of fire extinguishers and fire hoses for any purpose other than which it is intended for is a very serious offence. Your own safety and the safety of your fellow students and ATI property are endangered by faulty and damaged fire extinguishing equipment.

d. A R1000-00 fine will be charged in case of accidental damage or blatant misuse of the fire extinguishing. Equipment. If the damage exceeds R1000-00 and was not an accident, you are liable for the cost to repair the equipment and you may be expelled from the hostel or even the institute.

RC9. OTHER RULES

a. Ball games are not permitted in or around residence units except in designated sports fields.

b. The possession and storage of a vehicle by a student on Institute premises is subject to the approval of the Principal and CEO on the recommendation from the Student Welfare Manager.

c. If a student or a group of students from another institution, or a person not under the jurisdiction of the Institute, wishing to visit the Institute as a guest of any student or student organization, must obtain consent of the Principal and CEO prior to the visit.

d. No statement may be made to the press, radio or television or other medium by or on behalf of the students except with the written permission of the Principal and CEO.

e. No magazine, publication or pamphlet for which students are fully or partly responsible may be published or circulated without prior written permission from the Principal and CEO or his/her delegated person

f. The Institute shall not be liable for any loss or damage to the property of a student, or any property under his care, sustained on Institute premises through any cause whatsoever.

g. Students making use of Institute tools, equipment or any other assets are responsible for the safe and proper use of such items and their return to store in good condition. Damage or loss of Institute asserts, due to negligence of the student or students will be recovered from the students concerned.

h. Students are not allowed to interfere with the Institute employees.

RC10 OTHER INSTITUTE SERVICES

Sports and recreation

The Institute promotes and makes provisions for several outdoor and indoor sporting activities. Athletics, volleyball and netball are played throughout the year, but tournaments are usually in the summer months, while rugby and soccer are played mostly during winter. Additionally, the institute has a choir that performs choral music and competes in winter tournaments. Other recreational and cultural activities organized by the SRC includes film shows, drama productions, musical shows, beauty contests and boxing bouts among others. These are usually organized on Friday and Saturday evenings.

Institute Library

The primary function of the library is to support the teaching, learning and research needs of the Institute. The library houses a number of books, journals and audio-visual material, most of which may be loaned out to students, lecturers, administration and technical staff for a fixed period of time.

The Librarian, assistant librarian and library attendants are on duty between:

08h00 – 21h00 Monday to Thursday 08h00 – 20h00 Friday
08h00 – 13h00 Saturday.
During the Institute terms, library supports students and staff with library services.
The library provides the following additional services:
Online – Public Access (OPAC) system, for obtaining

information on available library material.
Photocopying
Computer access
Access to print and online newspapers

a. Computer Laboratories

The Institute has three Computer Laboratories for use by students. These have fully functional computers with the necessary software for academic purposes. The conduct within these Laboratories is regulated with stipulated rules that users have to abide by.

b. Science Laboratories

The Institute has seven equipped science laboratories, headed by the Senior Lab Technician who is assisted by other technicians. The primary function of these laboratories is to support the practicals and research needs ofthe Institute.

c. Printing and photocopying services

Printing and photocopying services are provided to students by the Institute in collaboration with printing and photocopying service providers at the cost to the student.

d. Tuck Shop

Some snacks, sweets, cool drinks, cigarettes etc. can be purchased from the Institute Tuck Shop. The opening hours for the Tuck Shop is regulated from time to time.

e. Transport

Due to the remoteness of the area and challenges to transport, the institute provides transport to students from the Institute to the Junction on weekends. It is required that all students who intend on utilizing the transport to register their names at the SRC offices and no student shall be allowed to the institute vehicle without registering with SRC prior to departure.
Fridays - drop off at King Williams town at 14:00
Sundays - collect at the junction at 16:30

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

STUDENT DISCIPLINARY PROCEDURES

STUDENT DISCIPLINARY PROCEDURES

DC1 ACCEPTANCE OF RULES AND REGULATIONS

1.1. Students must take note that on signing the registration form they enter into a contract with the Institute whereby they undertake to obey the rules and regulations of the Institute and to make themselves fully liable for the fees for the whole academic semester, irrespective of whether they leave the Institute on their own account or not.

1.2. It is the responsibility of all students to familiarize themselves with all the Institute rules and to check all the student notices and circulars which may be issued from time to time. The rules and regulations are applicable to all students as outlined in passages above and below. It is in the interests of students and staff that these rules and regulations are strictly observed in order to promote harmonious and congenital conditions for study and enhance the good name of the Institute.

DC2 INSTITUTE FEES

2.1. A student who is admitted to the Institute and who signed the registration form and the undertaking therein, shall be fully liable for all fees payable by him/her in terms of these regulations. Such a student will not be registered unless his/her financial obligations have been met.

2.2. Students are reminded that by signing the registration form, they personally accept responsibility for the payment of all fees irrespective of whether they are sponsored by private individuals or bodies or any other source.

2.3. Fees and conditions of payment and other rules and regulations are determined by the Institute administration and are subject to revision and/ or amendment from time to time without prior notice.

2.4. A student will be required to pay an indemnity deposit to cover possible damage to and breakage of Institute property. This amount shall be kept by the Institute throughout the student's period of study. If a student does not intend to return the following semester or year, he/she may submit a written claim for a refund of this amount.

2.5. Where damage is caused to Institute property and it is impossible to determine individual responsibility, the principal may, where he considers such a procedure just and reasonable in the circumstances, hold all members of the student body, or of a residence, club, society or a group of students jointly responsible for such damage, in which case the amount chargeable to each student will be apportioned accordingly to recover the cost of damage

2.6. Interest at the rate to be determined by the Institute may be levied on all overdue amounts regardless of whether fees are paid by students or by a sponsor.

A student who fails to pay the fees for which he/ she is liable by the specified date may:

a. Be excluded from lecturers.
b. Be excluded from residence.
c. Be refused admission to examinations.
d. Have his/her results or diploma certificates withheld by the Institute.
e. Students are reminded that the Institute reserves the right to increase fees without notice.

DC3 OFFENCES AND ACTS OF MISCONDUCT

The following are grounds that are regarded as acts of misconduct under which a student could be charged.

a. Breach of any explicit rule or regulation of the Institute as outlined in this booklet or any other policies.
b. Failure or refusal to carry out any lawful instruction given by members of the academic, technical, or administrative staff.
c. Persistently neglecting to attend classes, perform assignments, write class tests, and observe discipline in classes or in any other way failing to comply with the requirements prescribed for a course of study or as demanded by those in authority over him.
d. Undisciplined or insubordinate behaviour in an Institute residence or dining hall.
e. Any form of dishonesty during Institute examinations, tests, assignments and practicals.
f. Bringing to or consuming alcohol or intoxicating drugs on Institute premises.
g. Being under the influence of alcohol or intoxicating drugs, whether on Institute premises or elsewhere during Institute activities.
h. Taking possession of property without the owner's consent on Institute premises or elsewhere during Institute activities.
i. Damage to Institute property by willful act or negligence, including the painting on or placing of slogans or private notices on Institute property.
j. A form of conduct, whether on Institute premises or elsewhere, which is improper, unbecoming, or disgraceful or in any way liable to bring discredit upon the Institute or in any way liable to prejudice the proper conduct ofthe work of the Institute.
k. Possession of any dangerous weapon on Institute premises.
l. Entering a room of the opposite sex without explicit permission of the occupant or owner.
m. Aiding and/or colluding in any way whatsoever with another student in an act of misconduct as defined above, in any form of violence, abusive language, or harassment. Failure or refusal to identify oneself when lawfully required to do so.

DC4 STUDENT DISCIPLINARY PROCEDURE

The Principal and CEO is the chief disciplinary officer of the Institute.

Summary Action

Should the conduct of a student threaten or constitute a danger to personal safety or property or substantially interfere with the essential tasks of the Institute, the student may be summarily suspended. A student may also be subject to summary suspension if, following a warning by the department, staff, or Student Services Manager of the Institute to desist, he/she continues to engage in conduct that violates the Institute rules and regulations. In such cases, if necessary and appropriate, steps will be taken to eject the student from the Institute premises.

If injunctions or civil authority are required, the Principal and CEO, or in the Principal and CEO's absence, the Student Affairs Manager, and in the absence of the Principal and CEO or the Student Affairs Manager, another designated officer of the Institute, shall authorize such action after consultation with HOD's and student representatives to the maximum extent practicable.

In all cases involving summary action, the following procedure will be observed:

The Institute officer taking summary action shall provide notice of the students' conduct and summary action taken to the Head of Academics as soon as practicable.

The Student Affairs Manager shall immediately determine whether the summary suspension shall be continued or modified pending resolution of the matter. Summary suspension may be applied to a student's enrollment status and/or residence hall status. The Student Affairs Manager may terminate the summary action if the Deputy Principal determines at any time that the summary action was taken without sufficient evidence to support it.

Notice of termination, continuation or modification of the summary action and the substance of the disciplinary charge against the student, if any, shall be reduced to writing and forwarded to the alleged violator by the Student Affairs Manager personally or by first class and certified mail, return receipt requested, within ten (10) business days following the occurrence of the event. Said notice shall include a request that the alleged violator designate (if the matter is not resolved by an Informal Resolution Attempt), whether he/she wishes to have the charge resolved by an Informal or Formal Hearing pursuant to Institute's Procedures for a Disciplinary Hearing.

The alleged violator shall have ten (10) business days within which to contest in writing the Student Affairs Manager' decision regarding the continuation or modification of the summary suspension. If the Student Affairs Manager does not terminate the summary suspension within three (3) business days following his/her receipt of the alleged violator's written response regarding the summary suspension and if the matter is not resolved pursuant to an Informal Resolution Attempt, the student shall be entitled upon his/her demand to an immediate Informal or Formal Hearing of the charge, as described below. If the alleged violator fails to respond to the Student Affairs Manager's request regarding the choice of an Informal or Formal Hearing, the Student Affairs Manager may convene a Formal Disciplinary Hearing upon the written notice sent at least ten (10) business days prior to the date of the Hearing. Such notice shall either be delivered personally or sent by first class mail and certified mail, returnreceipt requested.

Disciplinary Actions for the Residence

By transgressing any of the mentioned rules you expose yourself to disciplinary actions, depending on the type of transgression and the severity of the transgression. The Disciplinary measures aim to promote corrective behaviour and to promote the objectives of the Hostel rules.
Disciplinary measures include, but are not limited to:

- Oral warning
- Written warning.
- Fine (up to R1000-00)
- Community service (garden duties, cleaning duties, maintenance work, etc.)
- Letter to parents
- Expulsion from hostel
- Expulsion from the Institute

The above-mentioned measures can be applied separately or in combination, therefore each case will determine the starting point of action to be taken. The Disciplinary Committee will handle each incident based on its merit. Repeated breaking of the rules will lead to expulsion

4.1. Informal Resolution Attempt:

A good faith attempt will be made to resolve all problems informally, first, by the appropriate department/section. This may include informal discussions with the alleged violator and Department members, Student Affairs Manager or staff members involved and, where appropriate, with supervisors or administrators at sequentially higher levels. If the matter is not resolved through an Informal Resolution Attempt, the alleged violator shall be requested to designate whether he/she wishes to have the charge determined by an Informal or Formal Hearing pursuant to the Institute's Procedures for a Disciplinary Hearing. Upon such designation, or upon the failure of the alleged violator to designate the type of Hearing that he/she desires within ten (10) business days following the Institute's request for the same, an Informal or Formal Hearing will be implemented, as described below.

4.2. Non-Admission Resolution Option

Ordinarily, students who are subject to the Institute's disciplinary procedure because of an alleged violation of the Guiding Principles of Conduct or other practices or policies of the Institute may elect to resolve the charges by an Informal Resolution, an Informal Hearing, or a Formal Hearing. If the

Informal Resolution does not result in an agreement on the charges for which the student accepts responsibility and the sanction to be imposed, the student may elect to have the disciplinary charges resolved through an Informal Hearing or Formal Hearing.

Students against whom both Institute disciplinary charges and related criminal charges are pending have an additional option for resolving disciplinary charges. Such students may elect the "Non-Admission Resolution" option. The Non-Admission Resolution option permits a student to negotiate the charges for which a sanction will be imposed without admitting or denying the charges, as well as to negotiate the sanction to be imposed.

Despite the lack of the student's admission of responsibility for any of the misconduct alleged, for purposes of a subsequent disciplinary proceeding the Institute will treat the student in the same manner as if he or she had accepted responsibility for the negotiated charges. The student may not appeal the results of the Non-Admission Resolution option. If the hearing officer and the student are unable to agree upon the disciplinary charges and the sanction to be imposed, the student may elect to resolve the pending disciplinary charges by either an Informal Hearing or a Formal Hearing. The Institute, in its sole discretion, may deny a student's election of the non- Admission.

DC5 THE DISCIPLINARY HEARING

5.1. Student Disciplinary Committee

a. There should be a Student Disciplinary Committee which shall hear about all matters relating to student discipline or alleged violations of Institute rules by students. The Student Disciplinary Committee shall consist of the following:

b. The Hearing Officer Section Manager or HOD or anyone appointed by the Principal and CEO will chair the Committee. The Hearing Officer shall have one vote and a casting vote in the event of a deadlock, in respect to all matters of fact and substance, including the question of the guilt or innocence of an alleged violator, and the appropriate sanction to be applied. The hearing officer may consult the other members of the committee but shall decide alone all matters relating to procedure or the admissibility of evidence.

c. A Head of an academic Department (HOD Forestry and HOD Agriculture) or Section Manager who shall have one vote in respect of all matters of fact and substance, including the question of the guilt or innocence of an alleged violator, and the appropriate sanction to be applied.

d. A representative from the SRC who one votes in respect of all matters of fact and substance shall have, including the question of the guilt or innocence of an alleged violator, and the appropriate sanction to be applied.

e. There shall be a chairperson appointed by the Principal and CEO.

f. Head of Departments/any official appointed by the Principal and CEO will lead the case.

g. SRC representatives will serve as an observer in the Disciplinary Hearing.

5.2. Hearing officer

The Chairperson at a hearing shall be styled the "Hearing officer". The Hearing officer shall have all the powers necessary to preside over disciplinary hearings and shall be responsible for all decisions relating to the procedures to be followed and evidence to be admitted at a hearing, and for participating, together with the other committee members, in determining whether an alleged violator is guilty of a breach of the rules of the Institute or not. In the event that an alleged violator has been found guilty of a breach of the said rules, the Committee shall determine what sanction, if any, should be imposed on an alleged violator, in accordance with the rules of the Institute. The Hearing Officer shall pronounce all decisions of the Committee.

The hearing officer may be the Head of Department if not already a member of the Committee or another senior manager appointed by the Principal and CEO. Alternatively, the Principal and CEO may appoint a person external to the Institute as hearing officer, who shall be an admitted advocate or attorney in South Africa, or a lecturer in a Faculty of Law in any South African University, whose minimum qualification is a Bachelor of Laws.

Hearing Coordinator

The Institute shall be represented in all matters concerned with student discipline by Student Affairs Manager, or his/her nominee from within Student Affairs. When dealing with matters relating to disciplinary hearings, such representative shall be styled the "hearing coordinator". The Hearing Coordinator shall not be a member of the Disciplinary Committee and shall not participate in the deliberations or decision–making processes of the Committee.

The functions and powers of the hearing coordinator shall be:

- To investigate alleged breaches of student discipline, or the rules of the Institute by a student or students, to interview interested parties or any other persons, to take statements and collect any evidence with due regard to the rights of alleged violators, and to do anything connected with the investigation of the matter which she or he considers necessary or desirable to facilitate the investigation.
- To decide what action to take in order to resolve the matter, including deciding whether or not to charge an alleged violator with misconduct in terms of the rules of the Institute.
- To draft and serve any charges or summonses relating to such alleged violations and to summon the alleged violators, complainants, or witnesses to a hearing.
- To negotiate or to deny a "non-admission resolution" in terms of Rule 4.3 hereof.

- To arrange for a hearing in respect of any charge.
- To coordinate all matters relating to the holding of a hearing, including securing the attendance of all parties, officials, witnesses, and alleged violators, as well as making arrangements for the availability of venues, materials and all other matters relevant to the conduct of the hearing.
- To represent the Institute at any disciplinary hearing in terms of these rules, and to make submissions on behalf of the Institute and in the interests of justice, at the hearing.
- To present the case against any alleged violator at any disciplinary hearing in terms of these rules.
- To keep a record of all outcomes of any hearing and to transmit these to the appropriate Institute officials.

a) At least two (2) days prior to the commencement of a hearing, the alleged violator must receive from the Hearing Coordinator a written statement outlining the charge. In the event that the alleged violator evades service of the notice upon him/her, or cannot be found after due search, the said notice shall be displayed at a prominent place at the front gates of the Institute in lieu of personal service.

b) Informal Hearing

c) If the alleged violator elects to proceed with an Informal Hearing, the Hearing Officer shall, based upon his/her investigation, determine whether there was a violation of the Guiding Principles of Conduct, and any applicable disciplinary action. Such investigation may include interviews with the alleged violator and witnesses, as well as a review of written statements, and the alleged violator's student file.

5.3. Formal Hearing

The Hearing Officer shall convene an adversarial proceeding (the "Hearing"). The Hearing is not intended as a trial before a court of law; therefore, adherence to rules of evidence is not required. Questions relating to the competency, relevancy or materiality of evidence and the latitude in the questioning of parties involved shall be based upon the determination of the Hearing Officer as to what is just, fair, and reasonable under the circumstances.

RESPONSIBILITIES OF THE HEARING OFFICER:

To ensure that the procedural guidelines are followed.

- To always maintain proper decorum. The Hearing Officer reserves the right to remove anyone who disrupts the proceedings.
- The Hearing Officer, a party and/or the party's adviser, may ask questions of the witnesses.
- Once the proceedings have begun, the Hearing Officer shall have no communication with a party or the party's
- Adviser outside of the hearing except to schedule Hearing meetings.

PROCEDURAL GUIDELINES:

Each of the parties or his/her adviser shall be afforded an opportunity to present an opening and closingstatement.
The complaining party and his/her witnesses shall be heard first.
The alleged violator shall be given an opportunity to testify and present evidence and witnesses but shall not be compelled to testify nor shall an inference be drawn from the failure to testify.
Each of the parties or his/her adviser shall have an opportunity to hear and question adverse witnesses.
Each party, in addition to his/her adviser, may have three observers present during the Hearing.
If any party plans to have an attorney present to act as the party's adviser, the party must notify the Hearing Officer forty-eight (48) hours in advance of the session in order to allow for Institute Counsel to be present. If Institute Counsel cannot attend the prescheduled session, the Hearing Officer will set another date convenient for all parties.

a. The decision by the Committee will be based solely upon the evidence presented at the hearing. The alleged violator's student file shall be deemed part of the record in evidence at the hearing.

b. A finding of the Committee shall be based on a fair preponderance of credible evidence.

c. It is the burden of the Institute represented by the hearing coordinator to show that it is more likely than not that the alleged violator committed the violation(s) contained in the charge.

d. If the alleged violator fails to appear at the Hearing, the Committee may, at its discretion, postpone it to another date or, based on the record and evidence before the Committee, issue a decision as to whether there was a violation(s) as charged and, if so, impose an appropriate sanction.

e. If the alleged violator appears, but walks out as a result of free choice, the session will continue in his/her absence. No negative inference will be made as a result of his/her departure.

f. An electronic recording of the hearing shall be made at the Institute's expense. The recording shall be maintained by the Hearing Coordinator for a period of one (1) year following the date of issuance of the finding. A party to the proceeding may obtain a written transcript or a copy of the recording at his/her expense.

g. As soon as practicable following the conclusion of the Hearing, a written decision will be forwarded to all parties. The decision will be sent to the Student Services Manager for proper recording.

DC6 DISCIPLINARY SANCTIONS

Possible Forms of Sanctions/ Offenses

Offences are graded according to the nature of the offences, of which Grade 5 offences are the most serious.

GRADE 1 OFFENCES

Grade 1 offences are dealt with in the first instance by the staff member concerned but will be reported to and signed by the Head of Department. When a third offence occurs, the matter is referred to by the Head of Department who will issue a final written warning.

If the same offender commits another offence of any nature, the matter will be referred to by the Disciplinary Committee.

The following will be regarded as Grade 1 Punishable Offences:

- Cheek/Insolence.
- Disruption of lectures in any way.
- Foul language and signs.
- Absence or late arrival for lectures.
- Littering.
- Disruptive/un-cooperative Behaviour in class.
- Smoking in unauthorized places.
- Unsuitable attire/appearance.
- The use of cellular phones in classrooms.
- Eating, drinking, and chewing gum in classroom.
- Damaging property unintentionally on Institute premises.

GRADE 2 OFFENCES

Grade 2 offences refer to the Head of Academics who will issue a written warning which will be considered a final written warning.

If the same offence occurs again, the matter will be referred to by the Disciplinary Committee.

The following will be considered Grade 2 Punishable Offences:

a) Fighting (without weapons).
b) In possession of offensive material.
c) Cheating in tests, copying computer exercises, projects or any other work intended for the year mark.
d) Tampering with safety and other equipment on campus.
e) Distribution of or placing of notices without permission.
f) Failing to prove identity as student/produce student card.

GRADE 3 OFFENCES

Grade 3 offences are dealt with by the Disciplinary Committee.

The following will be considered as Grade 3 Punishable Offences:

- Verbal or non-verbal abuse of staff member.
- Physical/verbal threat of staff member/fellow student.
- Racial remarks/insults.
- Cheating in end-of-semester examinations, as outlined in examination regulations

a) Use of a communication or mobile device during examinations, as outlined in examination regulations.
b) Drunkenness or possession of alcohol on campus
c) Organizing, inciting, or taking part in illegal student actions such as meetings, campaigns or marches on the campus.
d) Distribution of political material on the premises.
e) More than one Grade 2 offence.
f) Altering official documents such as medical certificates and qualifications and fraudulent use thereof.

Disciplinary action for Grade 3 offences may be expulsion or suspension for a period determined by the Internal Disciplinary Committee.

Should a student be found guilty of a Grade 3 offence and suspended by the Internal Disciplinary Committee or if the finding is guilty, but the student is allowed to return to classes, it is the responsibility of the student to catch up on any work conducted during the temporary suspension. In the event of missing an assessment during this period, no additional assessment will be given by the Institute.
If the student is found not guilty, the student must consult with the Institute to provide support regarding any work missed.

GRADE 4 OFFENCES

Grade 4 offences are immediately referred to the police after which a Disciplinary Hearing will take place. In addition, students who transgress this Code of Conduct in cases 9.4.2. (f), will be immediately suspended from classes until the Disciplinary Hearing takes place.

The following will be considered as Grade 4 Punishable offences:

a) In possession of dangerous weapons.
b) Assault of student's/staff members.
c) Vandalism to staff member's/Institute's/fellow students' property.
d) Sexual harassment.
e) Theft.
f) Any offence punishable under common law which can damage the Institute's image.

Disciplinary action for Grade 4 offences may be expulsion or suspension for a period determined by the Internal Disciplinary Committee.

Should a student be found guilty of a Grade 4 offence and suspended by the Internal Disciplinary Committee or if the finding is guilty but that the student is allowed to return to classes, it is the responsibility of the student to catch up on any work conducted during the temporary suspension. In the event of missing an assessment during this period, no

additional assessment will be given by the Institute.

If the student is found not guilty, the student must consult with the Institute to provide support regarding any work missed.

GRADE 5 OFFENCES / GROSS MISCONDUCT

The following will be considered as Grade 5 Punishable offences.

a) The use of narcotic drugs on the Institute premises
b) In possession of dangerous weapons i.e., Firearms, Sharp weapons
c) Threating other students, staff with a firearm
d) Distribution of drugs on the Institute premises
e) If a student is found using drugs or in possession of narcotic drugs on the premises, he/she will be expelled with immediate effect.

6.1.4 FCAFTI may exercise any of the afore-mentioned disciplinary actions against students/ student organisations that are found guilty of transgressing the code of conduct.

6.1.5 The Institute is, however, not confined to these above -mentioned actions

a. Oral reprimand and/or warning.
b. Reprimand and/or warning in writing.
c. Refusal of admission to any or all Institute examinations and/or tests and/or other forms of assessments.
d. Interim suspension or the lessening of privileges - Should the presence of a student potentially endanger co- students and staff; an interim suspension of the student may be made before the hearing. In this case the hearing and verdict must be concluded within five class days.
e. Suspension - The student is prohibited from attending classes and participating in Institute activities, temporarily forfeiting the opportunity to be assessed in that particular year. He/she may be allowed to continue studies if he/she returns after a minimum of one academic year.
f. Expulsion - The student is prohibited from attending classes and participating in Institute activities, permanently or temporarily forfeiting the opportunity to be assessed in that particular year. He/she may be considered for admission and continuation if he/she applies after a minimum of two (2) years

STUDENT ORGANISATIONS

6.1.6.1. Disciplinary action as set out on 6.1.5 when the action is taken against a student organization, the action may not apply to all members of the organization.

The organisation may forfeit FCAFTI acknowledgement and privileges for a certain period as determined by the Disciplinary Committee.

Determining Disciplinary Sanctions)
When determining the disciplinary sanctions, the following factors may be considering Nature, scope, and severity of violation(s)
Impact on the individual(s) involved and/or on the residence or Institute community.
Aggravated, intentional, repeated or multiple violation(s)
Disciplinary and civic history
Acknowledgement of accountability / responsibility for improper conduct

Remorse and Cooperation

1. When a student is separated from the Institute for disciplinary or academic reasons or violation of the Academic Integrity code, prior to the end of a semester, or officially withdraws from any course or courses, regardless of the method of instruction, by filing a written notice at the Student Affairs Manager office, cancellation of tuition, student activity, and special course fees only will be made. Please note: Application, general institution, and installment fees are nonrefundable. Cancellation will be made according to the Tuition Cancellation Policy Schedule shown in the respective term Class Schedule.
2. The Institute is under no obligation to delay or forgo its disciplinary process or the imposition of any disciplinary sanction pending the investigation or proceedings involving criminal charges or a civil action.
3. Disciplinary sanctions which do not restrict or revoke a student's rights or privileges or otherwise affect the student's status as enrolled; or sanctions applied as a result of informal resolution as described in the Student Handbook (Prospectus) may not be appealed.
4. Nothing in the preceding guidelines should be construed as limiting or preventing in any way, the right or authority of other officials of the Institute from taking necessary and appropriate action which affect students consistent with the officials stated, published, or implied role or responsibility.
5. Furthermore, the Student Affairs Manager may take disciplinary action in cases where he/she observes a student violating rules or regulations, or the terms of a previously applied disciplinary sanction, without following the disciplinary procedures described in the Student Handbook. If a staff member and/or a student report to the Student Affairs Manager that he/she observed a student violating a previously applied sanction, the Student Affairs Manager may impose additional sanctions without following the disciplinary procedures in the Student Handbook.
6. In the case of single, multiple or repeated violations the Hearing Officer may apply one or more sanctions of varying severity up to and including the level of his/her designated authority. A sanction may be instituted immediately or put in abeyance pending appeal.

DC7 PROCESS FOR APPEAL OF A DISCIPLINARY ACTION

A student, who is found guilty of violating the Institute regulation and subsequently sanctioned, may request an appeal, providing this request is made in writing within five (5) regularly scheduled class days following the date the student receives notification of the Hearing Officer's decision. Such appeal shall be to the Principal and CEO, as Chief Disciplinary Officer of the Institute, or if the Principal and CEO is unable to hear the appeal, his/her nominee, who shall be a senior officer or the Institute who was not involved in the hearing in respect which the appeal is lodged.

The written request for appeal shall be sent to the Student Affairs Manager and must include the following:

- Name and address of the student
- Nature of violation including date and place
- Disciplinary action taken and by whom.
- Reason for requesting an appeal.

There are four (4) grounds upon which a student may appeal a decision as a result of a disciplinary hearing:

- The original Hearing was not conducted in conformity with applicable procedures.
- The record before the Hearing Officer did not establish that it was more likely than not that the student committed the violation(s).
- The sanctions imposed were not appropriate for the violation(s), which the student was found to have committed.
- New Information, not known previously to the student, is sufficient to require that the decision and/or sanction be modified or vacated.

Disciplinary sanctions applied because of informal resolution as described in this Handbook may not be appealed.

The Head of Academics / Deputy Principal shall forward the request for appeal to the Institute Principal and CEO. Upon receiving the written request for an appeal with the above information, the principal considering the appeal shall obtain a copy of the Hearing Officer's decision and may review it along with the entire record presented at the Hearing. The Principal and CEO considering the appeal, reserves the right to modify the decision of the Hearing Officer. As soon as practicable, the decision on appeal will be made and forwarded to all parties and to the Student Affairs Manager for proper recording.

DC8 RELEASING DISCIPLINARY INFORMATION

Details relating to the disciplinary proceeding, the decision and the names of the individuals involved will not be made available except as required for internal Institute purposes or as required by law, or when charges are made, or proceedings instituted by or against the Institute or any member of the Institute community in courts or governmental agencies. The Institute shall notify both the accuser and the accused of the outcome (final determination with respect to the alleged sex offense and any sanction that is imposed) of any campus disciplinary proceeding brought alleging a sex offense.

DC9 TIME LIMITS

An alleged violator, who elects to have a charge resolved by an Informal Hearing, may waive the two (2) business day advance Notice of Charge requirement. All other time limits contained in the foregoing Disciplinary Procedure may be extended by mutual written consent of the complainant and the alleged violator, or by the Hearing Officer or the Officer considering an appeal.

FORT COX

AGRICULTURE & FORESTRY
TRAINING INSTITUTE

THE FARM

FORT COX FARM

Fort Cox institute Farm is situated on about 15225,175 ha land in size, it is broken up into 60 ha of cultivated land, and the rest is utilized as grazing area for livestock. The farm infrastructure includes farm offices, a shop, chicken, and red meat abattoirs, shearing sheds and other livestock handling facilities. The farm has a fleet of about nine tractors with implements. The major role of the farm is to provide an enabling environment for students learning and practical training for both academic (Diploma) and CEIRD (Centre for Entrepreneurship, Incubation and Rural Development) (short courses) programmes. It is therefore important that the farm infrastructure be maintained and further developed to its full potential. In delivering on its mandate, it is fundamental that the farm partners with the private sector, to access leading edge technologies fast tracking the development of these resources, and thereby maximize utilization of all the natural, built, and social capital of the Institute.

Cultivated land.

Currently, the Institute farm produces vegetables such as cabbage, spinach, carrot, beetroot and onion, and also cash crops such as potato and butternut on 08 ha of land, which get sold to the various markets around Amathole District Municipality and Buffalo City Metropolitan Municipality. In addition to vegetables, the farm also produces maize in summer (09 ha) for silage production and dry maize for feed production. The farm has also a small citrus orchard of 2000 trees consisting mainly of oranges and nartjies.

Livestock

Since this is an institution's farm, it therefore must demonstrate all domestic livestock that are of economic importance in South Africa. The farm keeps two beef herds of the Bonsmara and Nguni breeds with a total size of 126 cattle. The farm further runs the small stock section composed of sheep with a total size of 119. There is also a small dairy herd of 10 Jersey cattle.

Recently, the farm has introduced a cuniculture (rabbit production) with a total size of 29 rabbits.

Piggery

Currently, the Institute farm endows a breeding herd of 6 sows and 2 boars, which produce 2 Liters per year with an average litter size being 10 piglets. The Institute farm also sells weaners to the local market and abattoirs.