

**Tonga Institute of Higher Education
Ministry of Education
Kingdom of Tonga**

**Student Handbook
2006**

TABLE OF CONTENTS

ABOUT THIS HANDBOOK	6
VISION STATEMENT	6
PROGRAMS OF INSTRUCTION.....	6
ACCOUNTING	7
PROGRAM DESCRIPTION	7
Certificate Program.....	7
Diploma Program	7
ENTRY REQUIREMENTS	7
Certificate Program.....	7
Diploma Program	7
ARTICULATION AND CREDIT TRANSFER	7
Certificate Program.....	7
Diploma Program	8
PROGRAM TIMETABLE	8
Certificate Program.....	8
Diploma Program	9
ACCOUNTING CERTIFICATE COURSE CATALOG	10
NAP756 — OFFICE TAX PROCEDURES.....	10
NCS006 — WORK PLACE DOCUMENTS	10
NCS009 — NEGOTIATION SKILLS	10
NCS015 — PRESENTING REPORTS.....	11
NOS116 — KEYBOARDING TECHNIQUES	11
NOS118 — COMPUTER OPERATIONS – DATA RETRIEVAL	11
NOS119 — WORK ENVIRONMENT	11
NOS124 — ACCOUNTING – TO TRIAL BALANCE	12
NOS213 — COMPUTER OPERATIONS.....	12
NOS215 — DATABASE FUNDAMENTALS.....	13
NOS216 — SPREADSHEET FUNDAMENTALS	13
NOS219 — ACCOUNTING – BASIC REPORTS	13
NOS222 — WORD PROCESSING — INTRODUCTION.....	14
NOS225 — GENERAL LEDGER — COMPUTERIZED	14
NOS234 — PAYROLL — COMPUTERIZED	14
TS970 — ORGANIZATION AND MANAGEMENT	15
ACCOUNTING DIPLOMA COURSE CATALOG.....	16
NAP701 — INVENTORY — COMPUTERIZED	16
NAP702 — FIXED ASSETS — COMPUTERIZED.....	16
NAP704 — ADVANCED ACCOUNTING SPREADSHEETS	17
NAP710 — FINANCIAL ACCOUNTING APPLICATIONS 1	17
NAP711 — FINANCIAL ACCOUNTING APPLICATIONS 2	17
NAP712 — COMPANY ACCOUNTING	18
NAP717 — INTERNAL CONTROL PRINCIPLES	18
NAP720 — BUSINESS MATHEMATICS	18
NAP721 — BUSINESS STATISTICS	19

NAP722 — ECONOMICS FOR BUSINESS	19
NAP730 — BUDGETING	19
NAP731 — MANAGEMENT ACCOUNTING PRINCIPLES	20
NAP732 — MANAGEMENT ACCOUNTING APPLICATIONS	20
NAP735 — FINANCIAL MANAGEMENT PRINCIPLES	20
NAP750 — COMMERCIAL LAW	21
NAP751 — PARTNERSHIP AND BANKRUPTCY LAW	21
NAP752 — CONTRACT LAW	21
NAP753 — CONSUMER LAW	21
NAP757 — TAXATION LAW	22
NAP764 — COMPANY LAW	22
NOS226 — ACCOUNTS RECEIVABLE — COMPUTERIZED	23
NOS227 — ACCOUNTS PAYABLE — COMPUTERIZED	23
AGRICULTURE	24
PROGRAM DESCRIPTION	24
Certificate Program.....	24
Diploma Program	24
ENTRY REQUIREMENTS	24
Certificate Program.....	24
Diploma Program	24
ARTICULATION AND CREDIT TRANSFER	25
Certificate Program.....	25
Diploma Program	25
PROGRAM TIMETABLE	25
Certificate Program.....	25
Diploma Program	26
AGRICULTURE CERTIFICATE YEAR 1 COURSE CATALOG.....	27
AGC001 — Agricultural Systems	27
AGC003B — Computing	27
AGC005 — Communications.....	28
AGC008B — Animal Anatomy and Physiology	28
AGC008A — Animal Production.....	29
AGC002B — Biological Chemistry	29
AGC002A — Inorganic Chemistry	30
AGC003A — Agricultural Mathematics and Statistics	30
AGC007A — Crop Production	31
AGC0004A — Agricultural Machinery	32
AGC004B — Farm Workshop Practices.....	32
AGRICULTURE CERTIFICATE YEAR 2 COURSE CATALOG.....	33
AGC016 — Agriculture Food and Health	33
AGC012B — Animal Health.....	33
AGC012A — Animal Nutrition and Breeding	34
AGC915 — Research Methods	35
AGC014 — Agricultural Economics.....	35
AGC013B — Crop Improvement.....	36
AGC009A — Entomology	36
AGC009B — Microbiology	37
AGC011A — Farm Management Records.....	37
AGC006 — Soil Science	38
AGRICULTURE DIPLOMA COURSE CATALOG	39
AGC011B — Farm Management Decisions	39

AGC021 — Business Management.....	39
AGC022 — Agricultural Marketing.....	40
AGC017 — Introduction to Human Resource Management.....	40
AGC019 — Plant and Animal Products and Processing.....	41
AGC020 — Rural Development.....	41
0013A — Crop Protection.....	42
AGC018 — Project.....	43
AGC00A — Industry Based Work Experience.....	44
INFORMATION TECHNOLOGY.....	45
PROGRAM DESCRIPTION.....	45
Information Systems – Certificate Program.....	45
Information Systems – Diploma Program.....	45
Computer Science – Certificate Program.....	45
Computer Science – Diploma Program.....	45
ENTRY REQUIREMENTS.....	45
Certificate Program.....	45
Diploma Program.....	46
ARTICULATION AND CREDIT TRANSFER.....	46
Certificate Program.....	46
Diploma Program.....	46
PROGRAM TIMETABLE.....	46
Information Systems – Certificate Program.....	46
Information Systems – Diploma Program.....	47
Computer Science – Certificate Program.....	47
Computer Science – Diploma Program.....	47
INFORMATION TECHNOLOGY CERTIFICATE COURSE CATALOG.....	48
IT131 — Mathematics for Science.....	48
IT133 — Introductory Statistics.....	48
IT141 — Information Systems.....	49
IT142 — Introduction to Programming: Visual Basic.NET.....	49
IT151 — Introduction to Programming: Java.....	49
IT152 — Data Structures and Algorithms.....	50
IT161 — Professional Communication.....	50
IT162 — Information Technology Research Project.....	50
INFORMATION TECHNOLOGY DIPLOMA COURSE CATALOG.....	51
IT233 — Applied Statistics.....	51
IT235 — Discrete Mathematics.....	51
IT244 — Database Management Systems.....	52
IT245 — Management Information Systems.....	52
IT253 — Computer Organization.....	53
IT254 — Design and Analysis of Algorithms.....	53
IT255 — Special Topics.....	54
IT256 — Advanced Programming: Visual Basic .Net.....	54
IT262 — Principles of Management.....	54
TOURISM AND HOSPITALITY.....	55
PROGRAM DESCRIPTION.....	55
Certificate Program.....	55
ENTRY REQUIREMENTS.....	55

Certificate Program.....	55
WORK EXPERIENCE PROGRAM	55
PROGRAM TIMETABLE	56
Certificate Program.....	56
TOURISM AND HOSPLITALITY CERTIFICATE COURSE CATALOG	57
CRT1 – Communication Skills.....	57
CRT2 – The Tourism Industry	57
CRT3 – Occupational Health & Safety	57
CRT4 – Tourism Cultural Awareness	57
CRT5 – Work and Personal Effectiveness Skills	57
CRT6 – Destinations Information Advice in Tonga.....	57
CRT7 – Promote Tourism Products and Service.....	57
CRT8 – Computing	58
CRT9 – Visitor Market Knowledge.....	58
CRT10 – Airport Operations and Facilities	58
CRT11 – Arrival and Departure Assistance	58
CRT12 – Food Science & Hygiene Practices	58
CRT13 – Tour Guide.....	58
CRT14 – Tour Commentaries	58
CRT 15 – Process Financial Transactions	58
CRT 16 – Office Operation	59
CRT17 – Prepare Quotations.....	59
CRT18 – Non-air Documentation.....	59
CRT19 – Food Preparation.....	59
CRT20 – Food and Beverage Services	59
SCHOOL POLICY.....	60
SCHOOL FEES.....	60
REGISTRATION.....	60
ASSESSMENT.....	60
SATISFACTORY ACADEMIC PROGRESS	60
PLAGIARISM.....	61
WITHDRAWAL.....	61
CREDITS AND EXEMPTIONS.....	61
RESOURCE CENTRE	62
STUDENT DISCIPLINE	62
RESOLUTION PROCESS	63
CONTACT INFO	64

ABOUT THIS HANDBOOK

This handbook is a compendium of information about the programs, policies, requirements, and resources relevant to all students of the Tonga Institute of Higher Education (TIHE).

VISION STATEMENT

To prepare all Tongans with quality training for our changing world.

PROGRAMS OF INSTRUCTION

The Tonga Institute of Higher Education offers 4 programs of study.

- Accounting
- Agriculture
- Information Technology
- Tourism and Hospitality

Each program is administered by a coordinator who develops and oversees the academic and administrative operation of their respective areas of instruction. Each coordinator is responsible to the principal who reports directly to the Deputy Director of Post-Secondary Education.

ACCOUNTING

PROGRAM DESCRIPTION

The Accounting Program is a part-time program of instruction designed to train post-secondary students seeking a career in accounting. Emphasis is given to the development of practical skills and appropriate knowledge to allow graduates to perform competently in the workplace with a minimum of initial workplace training in both the civil service and private sector.

The Accounting Program awards a Certificate in Accounting and Diploma in Accounting.

Certificate Program

This program provides the vocational education and training necessary for students to become efficient and effective in the office environment.

Graduates of this program are ideal candidates for positions such as junior clerk, accounting officer, or any position that provides clerical and bookkeeping functions.

This is an 18 month program. Students must pass all certificate level courses listed in the course catalog to be awarded a Certificate in Accounting.

Diploma Program

This program provides a sound educational base to facilitate the successful completion of university level studies. This also satisfies the basic requirements for entry into the Tonga Society of Accountants.

Graduates are capable of performing the tasks of an accounting officer, assistant accountant, internal auditor, cost accountant and accountant in a managerial role.

This is a 3 year program. Students must pass all diploma level courses listed in the course catalog to be awarded a Diploma in Accounting.

ENTRY REQUIREMENTS

Certificate Program

Preference is given to applicants who are actively employed. Applicants who are not employed are considered for enrollment on a case-by-case basis, taking into consideration their qualifications and experience in accounting or accounting related jobs, and their likely ability to successfully complete the course.

Also, most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

Diploma Program

Students wishing to enroll in the Diploma in Accounting Program must have successfully achieved a Certificate in Accounting.

Again, most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

ARTICULATION AND CREDIT TRANSFER

Certificate Program

Graduates of the Certificate in Accounting Program are eligible for enrollment in the Diploma in Accounting Program with a full credit transfer.

Diploma Program

Graduates may be granted credit for a minimum of 8 units, and a possible maximum of 12 units towards a 24 unit degree at a business bachelor degree course at an Australian University. This granting of credits is consistent with those offered to Australian TAFE graduates.

PROGRAM TIMETABLE

Certificate Program

Semester 1

- NAP756 – Office Tax Procedures
- NCS006 – Work Place Documents
- NOS116 – Keyboarding Techniques
- NOS118 – Computer Operations – Data Retrieval
- NOS124 – Accounting – To Trial Balance

Semester 2

- NCS009 – Negotiating Skills
- NCS015 – Presenting Reports
- NOS119 – Work Environment
- NOS213 – Computer Operations
- NOS219 – Accounting – Basic Reports
- NOS222 – Word Processing – Introduction

Semester 3

- NOS215 – Database Fundamentals
- NOS216 – Spreadsheet Fundamentals
- NOS225 – General Ledger – Computerized
- NOS234 – Payroll – Computerized
- TS970 – Organization and Management

Diploma Program

Semester 1

- NAP720 – Business Mathematics
- NAP721 – Business Statistics
- NAP750 – Commercial Law
- NAP751 – Partnership and Bankruptcy Law
- NAP752 – Contract Law
- NAP753 – Consumer Law

Semester 2

- NAP710 – Financial Accounting Applications 1
- NAP712 – Company Accounting
- NAP717 – Internal Control Principles
- NAP756 – Office Tax Procedures
- NCS006 – Work Place Documents

Semester 3

- NAP711 – Financial Accounting Applications 2
- NAP722 – Economics for Business
- NCS009 – Negotiating Skills
- NCS015 – Presenting Reports

Semester 4

- NAP701 – Inventory – Computerized
- NAP702 – Fixed Assets – Computerized
- NAP764 – Company Law
- NOS225 – General Ledger – Computerized
- NOS226 – Accounts Receivable – Computerized
- NOS227 – Accounts Payable – Computerized
- NOS234 – Payroll – Computerized

Semester 5

- NAP731 – Management Accounting Principles
- NAP735 – Financial Management Principles
- NAP757 – Taxation Law

Semester 6

- NAP704 – Advanced Accounting Spreadsheets
- NAP730 – Budgeting
- NAP732 – Management Accounting Applications

ACCOUNTING CERTIFICATE COURSE CATALOG

NAP756 — OFFICE TAX PROCEDURES

Prerequisites: Nil

Purpose: Provide the student with an introduction to the practical components of taxation, with an emphasis on the compliance requirements of day to day clerical procedures. Generally Australian and State Taxation Office publications will be used as source material.

Content:

- PAYE tax
- Prescribed Payments tax
- Fringe Benefits tax
- Tax File numbers
- Training Guarantee Scheme
- Higher Education Scheme
- Sales Tax procedures
- Stamp duties
- Land taxes
- Child Support Agency
- Superannuation Guarantee Levy

Duration: 30 hours

NCS006 — WORK PLACE DOCUMENTS

Prerequisites: Nil

Purpose: To familiarize students with the workplace documents currently in common use in the Tongan Public Service. Students will study the form, content and purpose of such documentation. Additionally, students will be instructed in the process of determining and documenting job descriptions.

Content:

- Key accounting and administrative terms in common use in the Tongan Public Service.
- Key functions in the work environment
- Review duty statements (job descriptions) in order to develop skills to produce a written job description
- Principal workplace documents in the Tongan Public Service

Duration: 10 hours

NCS009 — NEGOTIATION SKILLS

Prerequisites: Nil

Purpose: To provide the student with the basic communication skills and information required to conduct an effective negotiation.

Content:

- How people communicate
- Communication skills for negotiators
- Dealing with conflict and criticism
- The negotiation process

Duration: 23 hours

NCS015 — PRESENTING REPORTS

Prerequisites: Nil

Purpose: This module introduces the student to the major components of report writing. Students undertake examples and activities to assist and highlight the process of report writing.

Content:

- Report writing – what is it?
- Research and investigation
- Interviews, surveys and questionnaires
- Organizing and analyzing data
- Report writing process
- Presenting reports

Duration: 22 hours

NOS116 — KEYBOARDING TECHNIQUES

Prerequisites: Nil

Purpose: To provide the student with basic knowledge and skills in keyboard techniques and operation.

Content:

- Use of relevant Occupational Health and Safety practices
- Key in data using appropriate techniques
- Identify keyboarding errors
- Proofreading techniques

Duration: 15 hours

NOS118 — COMPUTER OPERATIONS – DATA RETRIEVAL

Prerequisites: Nil

Purpose: To provide the student with basic knowledge and skills to operate a computer to access and retrieve data.

Content:

- Use of relevant Occupational Health and Safety practices
- Starting up a computer – terminology, etc
- Retrieve, view and close a database file
- Retrieve, view and close a spreadsheet file
- Retrieve, view and close a graphics file
- Retrieve, view and close a word processing file
- Create, save and print a word processed document

Note: NOS116/118 are grouped under the subject heading 'COMPUTING'

Duration: 15 hours

NOS119 — WORK ENVIRONMENT

Prerequisites: Nil

Purpose: This module provides the student with an overview of the function and structure of business Organizations, the rights and responsibilities of employers and employees, and the impact of change in the work environment.

Content:

- Classification of business activity
- Organizational goals and objectives

- Public vs. private sectors
- Private enterprise – forms of ownership
- Organizational structures
- Responsibilities of employers, employees
- Principles and implementation of equal opportunity and anti-discrimination legislation
- Industrial legislation system in Australia

Duration: 20 hours

NOS124 — ACCOUNTING – TO TRIAL BALANCE

Prerequisites: Nil

Purpose: This module is designed to provide the participant with the knowledge and skills to complete accounting processes to trial balance stage, including petty cash and manual payroll.

Content:

- Business Organizations
- Ownership
- Operating cycle
- Source documents
 - Functions
 - Process/control
 - Completion
- Journals
 - Functions
 - Entry processes
- Ledgers
 - Purposes and format
 - Accounts receivable/debtors ledger
 - Accounts payable/creditors ledger
 - Control accounts
 - Schedules
- Reconciliation statements
 - Purpose
 - Format
- Petty cash
- Payroll preparation

Duration: 45 hours

NOS213 — COMPUTER OPERATIONS

Prerequisites: Nil

Purpose: To provide the student with the underpinning knowledge and skills to effectively use a computer system.

Content:

- Use of relevant Occupational Health and Safety practices
- Disk management techniques
- Operation and application of input/output devices
- LANS and networking alternatives
- Managing electronic files

Duration: 15 hours

NOS215 — DATABASE FUNDAMENTALS

Prerequisites: NOS118 – Computer Operations – Data Retrieval

Purpose: To provide the student with the basic knowledge and skills to use a database software package effectively.

Content

- Use of manuals and on-line help to solve operational problems
- Introduction to Database management
- Basic maintenance of an Access database
- Restructuring a database
- Understanding query basics
- Using select criteria in queries
- Design and construct a spreadsheet
- Edit and manipulate data in a spreadsheet document
- Format and print a spreadsheet document
- Manage electronic files

Duration: 20 hours

NOS216 — SPREADSHEET FUNDAMENTALS

Prerequisites: NOS118 – Computer Operations – Data Retrieval

Purpose: To provide the student with the basic knowledge and skills to use a spreadsheet software package effectively.

Content

- Use of manuals and on-line help to solve operational problems
- Design and construct a spreadsheet
- Edit and manipulate data in a spreadsheet document
- Format and print a spreadsheet document
- Manage electronic and written files

Note: NOS215/216 are grouped under the subject heading 'Computing – Spreadsheets and Database'

Duration: 25 hours

NOS219 — ACCOUNTING – BASIC REPORTS

Prerequisites: NOS124 – Accounting to Trial Balance

Purpose: Provides the student with the knowledge and skills to produce final accounting reports for a sole trader which is not a Reporting Entity and which uses a periodic inventory system.

Content:

- The role of accounting standards, accounting reports and systems
- Property, plant and equipment Registers
- Depreciation and journal entries
- General Journal adjustment and closing entries
- Trading, Profit and Loss and Balance Sheet for a sole trader
- Preparation of a columnar worksheet and fully classified final reports

Duration: 30 hours

NOS222 — WORD PROCESSING — INTRODUCTION

Prerequisites:	NOS118: Computer Operations – Data Retrieval
Purpose:	To provide the student with basic knowledge and skills in the use of a word processing software package to produce simple documents in the most efficient manner. The emphasis is on the process rather than production skills.
Content:	<ul style="list-style-type: none">• Use of manuals and on-line help to solve operational problems• Create, save and print a word processed document• Format, edit and print simple documents• Manage electronic files
Note:	NOS213/214 are grouped under the subject heading ‘Computing’
Duration:	20 hours

NOS225 — GENERAL LEDGER — COMPUTERIZED

Prerequisites:	NOS118: Computer Operations – Data Retrieval NOS124: Accounting – To Trial Balance
Purpose:	Provide the student with the knowledge and skills to operate a computerized general ledger software package.
Content:	<ul style="list-style-type: none">• Understand relevant Occupational Health and Safety practices• Create and maintain a chart of accounts• Enter general journals• Access information using account inquiry procedures
Duration:	15 hours

NOS234 — PAYROLL — COMPUTERIZED

Prerequisites:	NOS118: Computer Operations – Data Retrieval
Purpose:	Provide the student with the knowledge and skills to operate computerized general ledger and payroll software packages and produce accounting data and reports.
Content:	<ul style="list-style-type: none">• Understand relevant Occupational Health and Safety practices• Create and maintain a chart of accounts• Enter general journals• Access information using account inquiry procedures• Establish and maintain a computerized payroll system• Process payroll using a computer payroll package
Note:	NOS225/234 are grouped under the subject heading “Computerized Accounting”
Duration:	15 hours

TS970 — ORGANIZATION AND MANAGEMENT

Prerequisites: Nil

Purpose: To introduce students to the regulations, relationships and laws affecting a business entity. Management roles and behavioral implications are examined to determine appropriate decision making.

Content:

- Business Activity
- Workplace Relations
- Equal Opportunity Legislation
- Industrial Relations
- Change in the workplace
- Challenge of management
- Managerial decision making
- Human resource management
- Motivation
- Leadership
- Managing Organizations through change and conflict

Duration: 40 hours

ACCOUNTING DIPLOMA COURSE CATALOG

NAP701 — INVENTORY — COMPUTERIZED

Prerequisites: Computer Operations – Data Retrieval
Financial Accounting Applications 2

Purpose: Provide the student with the knowledge and skills to operate computer inventory software to produce accounting data and reports.

Content:

- Access general ledger, accounts receivable and payable ledger, and inventory ledger
- Process all inventory and associated transactions
- Changes in inventory cost and selling price
- Correct entries in inventory ledger
- Produce account listings for all ledgers, account balances for all ledgers, profit and loss statement and balance sheet
- Reconcile inventory ledger with the general ledger

Duration: 15 hours

NAP702 — FIXED ASSETS — COMPUTERIZED

Prerequisites: Computer Operations – Data Retrieval
Accounting – Basic Reports

Purpose: Provide the student with the knowledge and skills to operate computer fixed asset software to produce accounting reports.

Content:

- Access and set-up function of fixed assets register
- Entry of appropriate business details to initiate software
- Create individual asset files
- Process acquisition, depreciation and disposal of fixed assets
- Produce individual asset report, depreciation schedule and fixed asset listing
- Update general journal
- Maintain fixed asset register by adding, deleting and changing fixed asset records
- Reconcile fixed asset register with general ledger

Duration: 15 hours

NAP704 — ADVANCED ACCOUNTING SPREADSHEETS

Prerequisites:	NAP703: Integrated Computer Accounting NAP735: Financial Management Principles NAP731: Management Accounting Principles
Purpose:	Provide the student with the knowledge and skills to plan, implement and use well-designed spreadsheets and specialized computer packages that are applicable to an accounting environment.
Content:	<ul style="list-style-type: none">• Features of a well designed spreadsheet• Advanced spreadsheets• Data manipulation in spreadsheets• Graphs• Importing data from other applications and systems• Importing spreadsheet output and graphs into other software products• Use of specialized computer packages
Duration:	60 hours

NAP710 — FINANCIAL ACCOUNTING APPLICATIONS 1

Prerequisites:	NOS219: Accounting – Basic Reports
Purpose:	Provide the student with knowledge of accounting standards, procedures and concepts.
Content:	<ul style="list-style-type: none">• Basic management reports and analysis• Incomplete (single entry) systems• One-write system concepts• Not-for-profit Organizations
Duration:	20 hours

NAP711 — FINANCIAL ACCOUNTING APPLICATIONS 2

Prerequisites:	NAP710: Financial Accounting Applications 1
Purpose:	Provide the student with knowledge of accounting standards, procedures and concepts.
Content:	<ul style="list-style-type: none">• Accounting and control over inventories• Accounting for partnerships• Accounting for primary producers• Accounting for leases• Consignment accounting• Recording of investments
Duration:	45 hours

NAP712 — COMPANY ACCOUNTING

Prerequisites:	NAP711: Financial Accounting Applications 2
Purpose:	Provide the student with knowledge of accounting standards, procedures and concepts as they apply, principally, to limited liability companies.
Content:	<ul style="list-style-type: none">• Types of companies, formation, documentation and statutory records• Share and debenture issues• Conversions to a company• Reserves, provisions, tax effect accounting• Statement of Cash Flows• Company financial statements• Consolidated accounts
Duration:	45 hours

NAP717 — INTERNAL CONTROL PRINCIPLES

Prerequisites:	NAP711: Financial Accounting Applications 2
Purpose:	Provide the student with the knowledge and skills to devise and evaluate accounting systems and related internal controls, and to understand the role of the external auditor.
Content:	<ul style="list-style-type: none">• Internal control, concepts and systems• Accounting systems and internal control• EDP internal control issues• The internal auditor and the process of internal auditing• External auditors• External audit – Not-for-profit Organizations• Operational auditing• Ethics
Duration:	45 hours

NAP720 — BUSINESS MATHEMATICS

Prerequisites:	Nil
Purpose:	Provide the student with the knowledge and skills to apply mathematical techniques to a variety of business applications and decisions.
Content:	<ul style="list-style-type: none">• Application of percentages• Simple interest, compound interest• Present and future value annuities• Straight line graphs
Duration:	30 hours

NAP721 — BUSINESS STATISTICS

Prerequisites: Nil

Purpose: To provide the student with the basic knowledge and skills to interpret and use statistical techniques in a variety of business activities.

Content:

- Role of statistics
- Visual presentation of data
- Measures of central tendency
- Measures of dispersion
- Correlation and regression analysis
- Elementary probability
- Normal distribution curve
- Sampling
- Index numbers
- Time series and trend analysis

Duration: 30 hours

NAP722 — ECONOMICS FOR BUSINESS

Prerequisites: Nil

Purpose: Provide the student with knowledge of the economic environment within which a business operates.

Content:

- The economic problem –basic concepts
- Supply and demand
- Markets
- Money, banking and interest
- International trade, exchange rates and the balance of payments
- Circular flow and economic fluctuations
- Structural change and unemployment
- Economic policies
- Growth and development

Duration: 60 hours

NAP730 — BUDGETING

Prerequisites: NOS219: Accounting - Basic Reports

Purpose: Provide students with the knowledge of financial management principles as they apply to budgeting.

Content:

- Goal and function of financial management
- Definition of various budgeting techniques, their roles and benefits
- Sales, production, service and cash flow budget
- Budgeted financial statements

Duration: 45 hours

NAP731 — MANAGEMENT ACCOUNTING PRINCIPLES

Prerequisites: NOS219: Accounting – Basic Reports

Purpose: Provide the student with the knowledge and skills to undertake costing procedures in a range of enterprises.

Content:

- Revenue and cost concepts
- Cost cycle and factory ledger
- Material and labor
- Overhead
- Manufacturing statements
- Responsibility accounting
- Direct costing
- CVP Analysis

Duration: 45 hours

NAP732 — MANAGEMENT ACCOUNTING APPLICATIONS

Prerequisites: NAP731: Management Accounting Principles

Purpose: To provide the student with the basic knowledge and skills to undertake actual and standard costing for various costing applications using traditional and activity based cost allocation techniques, for direct and absorption costing.

Content:

- Job costing
- Activity based costing
- Process costing
- Operations costing
- Joint and by-product costing
- Standard costing
- Factory management techniques

Duration: 45 hours

NAP735 — FINANCIAL MANAGEMENT PRINCIPLES

Prerequisites: NAP711: Financial Accounting Applications 2

Purpose: Provide the student with the knowledge of financial management principles as they apply to the environment of financial management, sources of finance, capital budgeting and the analysis and interpretation of financial statements.

Content:

- Goal, function and environment of financial management
- Sources of financing
- Working capital management (including cash, liquid assets and credit management)
- Analysis and interpretation of financial statements
- Capital budgeting decisions – techniques and applications

Duration: 45 hours

NAP750 — COMMERCIAL LAW

Prerequisites:	Nil
Purpose:	Provide the student with the knowledge of basic commercial law principles applicable within an office environment.
Content:	<ul style="list-style-type: none">• Origins of Law, Legal Institutions• Civil Liability• Business Entities• Negotiable Instruments• Cash Transactions Report Act
Duration:	30 hours

NAP751 — PARTNERSHIP AND BANKRUPTCY LAW

Prerequisites:	Nil
Purpose:	Provide the student with the knowledge of basic partnership and bankruptcy law principles applicable within an office environment.
Content:	<ul style="list-style-type: none">• Concept of Principal and Agent• Partnership and Joint Ventures• Bankruptcy Law
Duration:	30 hours

NAP752 — CONTRACT LAW

Prerequisites:	Nil
Purpose:	Provide the student with the knowledge of basic contract law principles and a selection of specialty contracts applicable within an office environment.
Content:	<ul style="list-style-type: none">• Contract Law• Law of Property and Mortgages• Specialty Contracts: leases, franchises, hire purchase• Insurance
Duration:	30 hours

NAP753 — CONSUMER LAW

Prerequisites:	Nil
Purpose:	Provide the student with the knowledge of basic consumer law principles applicable within an office environment.
Content:	<ul style="list-style-type: none">• Sale of Goods• Consumer Protection Legislation• Restrictive Trade Practices• Debt Collection• Intellectual Property
Note:	NAP750/751/752/753 are grouped under the subject heading 'Business Law'
Duration:	30 hours

NAP757 — TAXATION LAW

Prerequisites:	NAP711: Financial Accounting Applications 2
Purpose:	Provide the student with the knowledge and skills of income tax law and operations to apply to individuals and commercial enterprises.
Content:	<ul style="list-style-type: none">• Introduction to Income Tax Law• Assessable income (including capital gains)• Exempt income• Allowable deductions• Depreciation• Trading stock• Rebates• Income Tax Payable• Provisional Tax• Taxation of clubs and societies
Duration:	60 hours

NAP764 — COMPANY LAW

Prerequisites:	NAP750/751/752/753: Business Law
Purpose:	Provide the student with the knowledge of the Australian Securities Commission (ASC), the Corporations Law and the law relating to Associations. The emphasis is providing this knowledge to those who may fill the position of Company Secretary, or Company Director of a company or association.
Content:	<ul style="list-style-type: none">• Role of the Australian Securities Commission• Incorporation and its effects• Financing the company• Statutory reports, Company Registers• Role of the auditor• Officers and directors duties• External administration and winding up• Takeovers and acquisitions• Securities dealing, stock market manipulation, insider trading
Note:	In 1998 the ASC became the Australian Securities and Investment Commission (ASIC).
Duration:	60 hours

NOS226 — ACCOUNTS RECEIVABLE — COMPUTERIZED

Prerequisites:	Computer Operations – Data Retrieval Accounting – To Trial Balance
Purpose:	Provide the student with the knowledge and skills to operate a computerized accounts receivable software package.
Content:	<ul style="list-style-type: none">• Use of manuals and on-line help to solve operational problems• Entry of customer information• Entry of sales invoices data• Generate and print accounts receivable reports• Post transactions to general ledger• Maintain accounts receivable ledger• Reconcile Accounts Receivable ledger with General Ledger
Duration:	18 hours

NOS227 — ACCOUNTS PAYABLE — COMPUTERIZED

Prerequisites:	Computer Operations – Data Retrieval Accounting – To Trial Balance
Purpose:	Provide the student with the knowledge and skills to operate a computerized Accounts Payable software package.
Content:	<ul style="list-style-type: none">• Enter and maintain supplier information file• Credit purchases data entry• Generate and print following reports<ul style="list-style-type: none">Purchase category analysisTrial balanceAged creditors listingTransaction listingSupplier details• Maintain accounts payable ledger• Posting transactions to the General Ledger and reconciliation against accounts payable records.
Note:	NAP701/702 and NOS226/227 are grouped under the subject heading “Computerized Accounting”
Duration:	18 hours

AGRICULTURE

PROGRAM DESCRIPTION

The Agriculture Program is a full-time program of instruction designed to provide post-secondary education and training for students seeking a career in agriculture. Emphasis is given to the development of practical skills and appropriate knowledge to allow graduates to perform competently with a minimum of initial workplace training.

The agriculture program awards a Certificate in Agriculture and Diploma in Agriculture.

Certificate Program

This program provides the vocational education and training necessary for students to become efficient and effective workers in the agricultural field.

This is a 2 year program. Students must pass all certificate level courses listed in the course catalog to be awarded a Certificate in Agriculture.

Semesters 2 and 4 include an Industry Based Work Experience. Refer to the "On the-job-training" booklet for details.

Diploma Program

This program includes all of the requirements of the certificate program. In addition, during the final year, students are given the chance to choose a field of specialization to conduct a full year project closely supervised by a faculty supervisor.

This is a 3 year program. Students must pass all courses listed in the course catalog to be awarded a Diploma in Agriculture.

Graduates of the course are ideal candidates for the following positions: farmer, farm employee, civil servant, researcher, extension officer, and employee in a commercial agricultural organization.

ENTRY REQUIREMENTS

Certificate Program

Applicants should have demonstrated satisfactory performance at Pacific Senior Secondary Certificate level or higher with passes in English, mathematics and the sciences. Applicants who do not meet the above prerequisites are still considered for enrollment on a case-by-case basis, taking into consideration their qualifications and experience in agriculturally related jobs and their ability to successfully complete the course.

Most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

Diploma Program

Students wishing to enroll in the Diploma in Agriculture Program must have successfully achieved a Certificate in Agriculture.

Again, most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

ARTICULATION AND CREDIT TRANSFER

Certificate Program

Graduates of the Certificate in Agriculture Program are eligible for enrollment in the Diploma in Agriculture Program with a full credit transfer.

Diploma Program

Graduates from the Diploma in Agriculture Program are eligible, through negotiation, to enroll in the degree courses at Faculty of Land, Food and Natural Resources.

PROGRAM TIMETABLE

Certificate Program

Semester 1

- AGC001 – Agricultural Systems
- AGC002A – Inorganic Chemistry
- AGC002B – Biological Chemistry
- AGC003A – Agricultural Mathematics and Statistics
- AGC003B – Computing
- AGC004B – Farm Workshop Practices
- AGC008B – Animal Anatomy & Physiology
- AGC005 – Communications

Semester 2

- AGC000A – Industry based work experience (2 x 4 weeks)
- AGC004A – Agricultural Machinery
- AGC007A – Crop Production
- AGC007B – Plant Science
- AGC008A – Animal Production

Semester 3

- AGC009A – Entomology
- AGC006 – Soil Science
- AGC012A – Animal Nutrition & Breeding
- AGC009B – Microbiology
- AGC016 – Agriculture, Food & Health
- AGC014 – Agricultural Economics

Semester 4

- AGC013B – Crop Improvement
- AGC012B – Animal Health
- AGC015 – Research Methods
- AGC011A – Farm Management Records
- AGC000B – Industry based work experience (2 x 4 weeks)

Diploma Program

Semester 1

- AGC018 – Project (11/2 days per week)
- AGC013A – Crop Protection
- AGC011B – Farm Management Decisions
- AGC020 – Rural Development
- AGC017 – Intro to Human Resource Management

Semester 2

- AGC018 – Project (11/2 days per week)
- AGC021 – Business Management
- AGC022 – Agricultural Marketing
- AGC020 – Rural Development
- AGC019 – Plant & Animal Products & Processing

AGRICULTURE CERTIFICATE YEAR 1 COURSE CATALOG

AGC001 — Agricultural Systems

Prerequisites: Nil

Purpose: This subject aims to introduce students to sustainable agriculture and to consider agriculture as part of a total dynamic system. It also aims to build their understanding of the inter-relationship of the factors that affect the systems within which agriculture exists.

Contents: Upon completion of this subject, a student shall be able to:

- Describe traditional agricultural systems
- Discuss the significance of agriculture to Tonga
- Explain the fundamentals of systems thinking
- Identify the place of sustainable agriculture in a systems environment
- List the strengths and fragility in the Tongan ecosystem
- Discuss the inter-relationship between agricultural systems and other natural and socio-economic systems
- Identify and describe the operation of Tongan agricultural systems and sub-systems
- Critique current systems and offer alternatives
- Identify agents of change and be able to predict possible outcomes
- Discuss the ethical and social responsibilities that involve agriculture.

Duration: 45 hours

AGC003B — Computing

Prerequisites: Nil

Purpose: This subject aims to provide students with skills in selecting, using and maintaining personal computer systems for personal, professional and study purposes.

Contents: Upon completion of this subject a student shall be able to:

- Identify components of a computing system.
- Use computer terminology accurately and appropriately.
- Describe and explain applications of computer based information systems.
- Operate correctly a personal computer and its operating system including maintenance and minor fault diagnosis.

Duration: 30 hours

AGC005 — Communications

Prerequisites: Nil

Purpose: This subject aims to develop the skills of effective communication in all situations including the workplace.

Contents: Upon completion of this subject, a student shall be able to speak, listen and write competently and effectively in Tongan and English as follows:

- Recognize and state the barriers to communication and how they can be overcome.
- Write a competent and accurate report, business letter and personal resume.
- Organise and participate confidently and competently in a meeting and be able to take minutes and write an agenda.
- Select and use appropriate reference sources.
- Select and use appropriate communications technology.
- Become effective learners.
- Be able to present information to a group of people.

Duration: 60 hours

AGC008B — Animal Anatomy and Physiology

Prerequisites: Nil

Purpose: This subject aims to provide students with an understanding of the structure and function of the skeletal, muscular, circulatory, respiratory, digestive, reproductive and immune systems of the animals of Agricultural significance.

Contents: Upon completion of this subject the student will be able to:

- Describe the function of the skeleton, explain the growth of bones and the system of articulation.
- Name the major muscular of the body, describe the growth of muscle and explain their system of movement.
- Name the components of the digestive system and describe their role in the process of digestion.
- Explain the differences between monogastric and ruminant digestion.
- Describe the circulatory system and the function of its components.
- Name and describe the function of the components of the reproductive system, and its hormonal regulation.
- Name the components of the respiratory system and their function.
- Explain the function of the immune system.
- Comment on the similarities and differences between the common domestic animal species for each of these systems.

Duration: 60 Hours

AGC008A — Animal Production

Prerequisites: Nil

Purpose: This subject aims to provide students with:

- An understanding of the Animal Production systems of Tonga.
- An appreciation of the interaction with the environment on the integration of animal production into agricultural systems.
- Knowledge of the development of management and husbandry practices appropriate to the domestic market requirements and the facilities required to implement these management strategies.

Contents: Upon completion of this unit students will be able to:

- Describe the range of animal production systems in Tonga, and associated products.
- Discuss the facilities required to establish and maintain an animal enterprise giving due regard to aspects of animal behavior and welfare.
- Describe market specifications for particular uses, and visually assess animals as to their suitability for these markets.
- Discuss the reproductive cycles of the animal species being used and be able to visually assess animals as to their suitability to be used in the breeding program.
- Demonstrate the skills required to carry out appropriate husbandry programs.
- Identify the main breeds of animals used in the animal production systems.
- Use terminology appropriate to the industry, having developed a glossary of terms as used in each industry.

Duration: 60 hours

AGC002B — Biological Chemistry

Prerequisites: Nil

Purpose: This subject aims to provide students with a basic understanding of the structure and properties of the chemical components of cells in plants, animals and micro-organisms, and their functional significance in biological systems.

Contents: Upon completion of this subject a student shall be able to:

- Describe the general structure of amino acids, peptides and proteins and the functions of proteins within cells and organisms.
- Describe the general structure of sugars and polysaccharides and the functions of carbohydrates within cells and organisms.
- Describe the structure of lipids and the functions of fats, fatty acids, glycerol, phospholipids and steroids within cells and organisms.
- Describe the structure of nucleic acids and the function of DNA and RNA to genetic mechanisms within the cell.
- Describe the process of catalysis and explain its significance in agricultural and biological systems, with particular emphasis on enzyme activity.
- Describe in brief outline the processes of photosynthesis, respiration and biosynthesis and explain the significance of these processes to cells and organisms.

Duration: 45 hours

AGC002A — Inorganic Chemistry

Prerequisites: Nil

Purpose: This subject aims to provide a basic understanding of the structure and properties of inorganic chemicals important to agricultural production, the nature of chemical change and the factors relevant to processes in agriculture, and knowledge and skills in the analytical techniques used for agricultural purposes.

Contents: Upon completion of this subject a student shall be able to:

- Describe the structure of matter in terms of atoms, molecules and ions.
- Use accepted conventions for names, symbols and formulae of common elements and compounds, and ions.
- Distinguish between pure substances and mixtures, and elements and compounds by reference to physical and chemical properties, and atomic and molecular structure.
- Distinguish between compounds classified as organic and inorganic.
- Describe the molecular arrangements and interactions within the states of matter, solid, liquid, and gas and in solutions.
- Describe the nature of chemical bonding using examples of ionic, metallic and covalent bonding and the effect of bonding type on physical properties.
- Describe the mechanism of chemical changes such as combination, decomposition, solution and hydration reactions, precipitation, acid-base reactions, oxidation-reduction reactions.
- Write balanced chemical equations.
- Define the terms, rate, equilibrium, exothermic and endothermic, as they apply to chemical changes.
- Calculate weights, volumes and concentrations of reactants and products.
- Calculate proportions and amounts of elements contained within compounds.
- Define the terms, acid, base, and pH, and apply these definitions to common examples.
- Explain how the strength of acids and bases differ, and the implications of these differences.
- Describe how buffer solutions act to stabilize pH.
- Define the terms, oxidation and reduction, in terms of electron gain and loss.
- Describe common situations in which oxidation-reduction reactions occur and identify the nature of the electron transfer and its implication.
- Perform gravimetric analysis, and pH and redox titrations on materials of agricultural significance.

Duration: 45 hours

AGC003A — Agricultural Mathematics and Statistics

Prerequisites: Nil

Purpose: This subject aims to provide students with skills in performing calculations required for agricultural operations, and in collection, presentation and analysis of data.

Contents: Upon completion of this subject a student shall be able to:

- Apply correctly the conventions for using significant figures, units, symbols, equations, formulae, and graphical representations.
- Perform basic calculations associated with agricultural production from raw data.

- Complete correctly calculations involving percentages, proportions, ratios, scales and rates.
- Complete correctly calculations involving distances, areas, and volumes.
- Identify data as quantitative or qualitative.
- Collect, summarize and present data in a form appropriate to the type of data and the use to which it will be put.
- Produce tables, pie charts, bar charts, histograms, frequency polygons, ogives (cumulative frequency graphs), and line graphs from raw data in accordance with the nature of the data concerned and the conventions for these techniques.
- Interpret data presented in various forms of table or graphical representation.
- Calculate the mean for a set of data using raw or grouped data.
- Calculate the median for a set of data using raw or grouped data.
- Calculate the mode for a set of data using raw or grouped data.
- Compare the use of the mean, the median and the mode as measures of central tendency.
- Calculate the range and the quartile range for a set of data.
- Calculate the variance and standard deviation for a set of data.
- Compare the range, the quartile range, the variance and the standard deviation as measures of dispersion.
- Describe the characteristics of the normal distribution in terms of proportions of the population likely to be found in certain sectors of the population.
- Apply basic concepts of probability with particular relation to sampling.

Duration: 45 hours

AGC007A — Crop Production

Prerequisites: Nil

Purpose: This subject aims to provide students with skills and knowledge on crop husbandry and management practices of field crops, root crops, and other crops of importance to Tonga.

Contents: Upon completion of this subject, a student shall be able to:

- List Tonga's field crops, root crops and other crops of importance.
- List and describe the origin of Tonga's crop plants.
- Discuss the climate of the South Pacific and crop distribution in such climates.
- Describe the cultural practices including crop establishment and growing season requirements of a selection crops.
- Explain the general botanical characteristics of selected crops representative of major crop types.
- Discuss soils and soil fertility in relation to crops and their requirements.
- Explain the importance of pest, disease and weed control to optimize yields and quality of crops.
- Discuss the harvesting, post harvest handling and storage requirements of selected crops.
- Describe product quality characteristics.
- Discuss world production patterns of food crops and the influence of such patterns on Tonga's crop production and farming systems.
- Explain the economic and marketing considerations for Tonga's major crops.

Duration: 90 hours

AGC0004A — Agricultural Machinery

Prerequisites: Nil

Purpose: The subject aims to provide students with skills and knowledge in the management, maintenance, selection and safe operation of farm machinery.

Contents: Upon completion of this subject, a student shall be able do:

- Evaluate the type, size and range of agricultural machinery appropriate to Tongan agricultural systems.
- Describe suitable tillage, planting, harvesting, spraying and transport machinery for a specific crop (crops).
- Distinguish the safety features of modern tractors and associated equipment and advise on deficiencies which compromise safety to the operator or other workers.
- Explain the principles of operation of tractors and their selection based on power requirements and other desirable features.
- Demonstrate safe procedures in attaching trailed and 3 point linkage equipment.
- Explain the principles of operation and maintenance of small engines particularly those normally found in chainsaws, brushcutters, rotary hoes etc.
- Describe daily start-up and shut-down procedures.
- Discuss sound preventative maintenance of agricultural machinery.
- Demonstrate sound problem recognition skills.
- Appreciate the capital outlay involved in purchase of machinery and sound methods of estimating operating costs (/hr or / ha), depreciation etc.
- Explain machinery capacity and its relationship to timeliness of critical agricultural operations.

Duration: 60 hours

AGC004B — Farm Workshop Practices

Prerequisites: Nil

Purpose: This subject aims to provide students with skills and knowledge in the fields of farm workshop practices, small engine workshop practices, fence construction and building construction.

Contents: Upon completion of this subject a student shall be able to:

- List the resources required to establish a functional farm workshop.
- Discuss safety issues in establishing a farm workshop.
- Demonstrate the safe use and operation of hand and power tools for use with metal work and wood work.
- Discuss the fundamentals of operation of a small internal combustion engine.
- List the importance considerations in maintaining / servicing small engines.
- Identify the skills required to carry out basic construction of farm related structures.
- Demonstrate sound surveying techniques for building construction and land area determination.
- Demonstrate sound techniques of fence and gate construction.
- Explain the process and techniques involved in concrete work and block work.

Duration: 30 hours

AGRICULTURE CERTIFICATE YEAR 2 COURSE CATALOG

AGC016 — Agriculture Food and Health

Prerequisites: Nil

Purpose: This subject aims to provide students with an understanding of the relationship between agricultural production, food consumption and health, with knowledge of human nutrition and the impact of food supply on the health of various population groups, and with an appreciation of, and skills to manage agricultural production with a view to improving human nutrition and health.

Contents: Upon completion of this subject a student shall be able to:

- Describe the nature of traditional Tongan agriculture and explain its implications for diet and nutrition, and for social and economic structures.
- Explain the relationship between agriculture, food and nutrition and the impact of food production and imports on health, economic and social well-being.
- Describe and explain the environmental, agricultural, economic, social, cultural and personal factors which influence the amount and variety of food available to particular communities and individuals.
- Describe the types of food and agricultural production systems which operate in the Pacific region and explain how various factors affect food production.
- List the components of food and describe their nutritional functions within a balanced diet.
- Describe and explain the nutritional requirements of individuals and groups of people and the factors which influence their requirements and their capacity to satisfy their needs.
- Identify significant sources of nutrients within certain foods and diets.
- Propose balanced diets for specific groups of people given particular constraints of food availability.
- Describe methods available for the assessment of nutritional status for particular groups.
- Describe the signs and causes of malnutrition.
- Predict the type and severity of nutritional and dietary problems likely to occur in specific communities and areas given the nature of food production and availability.
- Evaluate various local, regional and world food programs in their effectiveness in addressing issues of food production, food distribution and human health and nutrition.

Duration: 60 hours

AGC012B — Animal Health

Prerequisites: Animal Production, Anatomy and Physiology, Microbiology.

Purpose: This subject aims to provide students with:

- An understanding of the causes of disease, the defense mechanisms both natural and artificial used by the animal to combat disease.
- Knowledge of the main animal diseases in Tonga, their identification, treatment and control.
- Knowledge of the importance of quarantine and hygiene in restricting the spread of disease.

Contents: Upon completion of this subject a student should be able to:

- Identify healthy and unhealthy animals.

- Discuss the predisposing causes of disease, and the animal's ability to combat disease.
- Describe the nature and causes of disease.
- Describe techniques for investigating a disease.
- Discuss suitable measures for disease prevention and control.
- Identify common diseases, their symptoms and treatment.
- Appreciate the role of drugs in combating disease.
- Describe the importance of disinfection and sanitation in controlling the spread of disease.
- Describe the requirements for the correct use and storage of animal husbandry equipment.

Duration: 60 hours

AGC012A — Animal Nutrition and Breeding

Prerequisites: Animal Production Anatomy and Physiology

Purpose: This subject aims to provide students with:

- An understanding of ruminant and monogastric digestive systems, composition of feeds, animal requirements and ration formulation.
- An understanding of the basic principals of genetics, their application in livestock breeding programs, breeding programs, artificial breeding and selection programs.

Contents: Upon completion of this unit a student will be able to:

- Identify the components of ruminant and monogastric digestive systems, and discuss their function.
- Discuss the components of a balanced diet for a range of livestock.
- Understand the chemical analysis of foodstuffs and their use in the formulation of rations.
- Formulate a balanced diet for specific classes of livestock from a given range of foodstuff.
- Describe the structure of genes and demonstrate an understanding of their functions.
- Distinguish between different types of autosomal and sex chromosomes, and understand their mode of division during both mitosis and meiosis.
- Explain how genes are transferred from parent to offspring.
- Understand the principals of inheritance, and its application to breeding programs.
- Discuss the concept of selection for genetic merit.
- Define selection differential, generation interval, and their role in the measurement of genetic gain.
- Discuss the development of genetic evaluation programs, their requirements, and use in breeding programs.
- Discuss the application of the principals of genetic selection on animal breeding programs in Tonga.

Duration: 60 hours

AGC915 – Research Methods

Prerequisites:	<p>A satisfactory knowledge of types of data, of techniques for the summarizing and presentation of data and of parameters for measuring central tendency and dispersion is assumed. Students will normally have completed AGC003A Agricultural Mathematics — Calculations and Statistics.</p> <p>Concurrently with this subject, students will be undertaking AGC018 Project requiring the application of concepts and techniques covered in this subject.</p>
Purpose:	<p>This subject aims to provide students with the skills and understanding required to design experiments, surveys and investigations, and analyse and interpret data derived from such procedures.</p>
Contents:	<p>Upon completion of this subject a student shall be able to:</p> <ul style="list-style-type: none">• Describe the nature of the research process.• Distinguish different types of data and methods for handling such data.• Describe different techniques of obtaining research data, viz. experiments, surveys, questionnaires and accumulated statistics.• Select the appropriate investigatory technique and data collection process for a particular research problem.• Describe the steps involved in pursuing a scientific investigation.• Analyse data and draw inferences relating to whether individuals or samples belong to populations.• Analyse data and draw inferences relating to observed differences between samples.• Analyse data and draw inferences relating to possible associations between variables.• Design experiments or investigations to answer research questions taking account of the need for replication, control and project management.
Duration:	<p>60 hours</p>

AGC014 — Agricultural Economics

Prerequisites:	<p>Nil</p>
Purpose:	<p>This subject aims to provide students with skills and knowledge of the basic theoretical concepts of agricultural economics and the application of these to developing country economies, especially the Tongan economy.</p>
Contents:	<p>Upon completion of this subject, a student shall be able to:</p> <ul style="list-style-type: none">• Define the nature of agricultural economics.• Explain the significance of agriculture to the Tongan economy.• Explain the place of this subject within the framework of the broader study of rural resource/environmental economics.• Discuss the macroeconomic principles which determine the functioning of a market economy.• Discuss the concept of the market economy and the fundamentals of supply and demand relating to agricultural products and services.• Explain the concept of elasticity as it applies to agricultural products.• Explain the cause and effect of government intervention in agriculture.• Discuss the reasons for and problems of economic growth in developing countries.• Discuss the reasons for and problems of international trade.• Discuss the role of regional trade agreements and Organizations.
Duration:	<p>60 hours</p>

AGC013B — Crop Improvement

Prerequisites: Nil

Purpose: This subject aims to provide students with skills and knowledge of plant breeding, yield potential and end product quality of economically important crops in Tonga.

Contents: Upon completion of this subject, a student shall be able to:

- Explain the important factors essential to improving adoption, yield and quality of crops of current and future economic importance to Tonga.
- Define the term 'plant breeding' and show how such can improve crop production.
- Outline the plant breeding methods available to produce new and improved varieties of cultivars for superior yields, better adaptation and /or improved disease resistance or tolerance.
- Explain the importance of hybridization.
- Show how to carry out pollination in some crops and exercise self and cross pollination where needed.
- Discuss the concept of selection for genetic merit.
- Discuss the factors which can limit crops achieving their potential yield.
- List yield limiting factors into two groups indicating those which you have some control (i.e. soil fertility, weeds, pests, diseases, etc) and those you have little control over (i.e. Climate, etc).
- Explain the importance of timeliness with regard to sowing dates, fertilizer application, weed a pest control and other forms of cultural manipulation.
- Discuss production, harvest and post harvest handling factors which greatly affect the quality of the end product.
- Define the term 'quality assurance and explain why produce supplied to export markets must often meet strict quality standards.

Duration: 60 hours

AGC009A — Entomology

Prerequisites: Nil

Purpose: This subject aims to provide students with an understanding of the biology of insects with particular reference to their activities which are significant for agricultural production.

Contents: Upon completion of this subject a student shall be able to:

- Describe the gross anatomy of an adult insect with particular reference to its locomotory appendages, mouthparts, body segmentation, digestive system, respiratory and circulatory system, and reproductive system.
- Describe the generalized life cycle of insects which demonstrate complete metamorphosis and incomplete metamorphosis.
- Describe the factors which influence the reproductive behavior of insects.
- Describe the factors which influence the feeding behavior of insects.
- Identify insects in the adult and juvenile form belonging to those groups which are significant to crop and product damage.
- Describe and explain the mechanism of methods of insect control, including various types of chemical, physical, biological and cultural control techniques.

Duration: 45 hours

AGC009B — Microbiology

Prerequisites: Nil

Purpose: This subject aims to provide students with knowledge of the nature of micro-organisms and their significance to crop and animal production.

Contents: Upon completion of this subject a student shall be able to:

- Describe the significance of fungi, bacteria and viruses for animal and plant production.
- Describe the vegetative and reproductive structures of fungi.
- Describe the mechanism of and factors affecting growth, asexual and sexual reproduction in fungi.
- Identify fungal structures important to the classification and identification of fungi.
- Describe and explain the mechanism of various measures employed to protect crops from fungal attack.
- Describe the basic structure of the bacterial cell as it is important to an understanding of the growth, nutrition, survival and pathogenicity of bacterial pathogens.
- State the characteristics of selected bacterial pathogens.
- Describe the basic structure of viruses with regard to characteristics which distinguish viruses from other micro-organisms and which may be used to identify particular types of viruses.
- Describe in general outline the replication of viruses.
- Explain how viruses cause disease in plants and animals.
- Describe and explain how diseases caused by viruses can be controlled.

Duration: 45 hours

AGC011A — Farm Management Records

Prerequisites: Nil

Purpose: This subject aims to provide students with the skills and knowledge to organise and maintain physical and financial records for the farm business in a format suitable for use by management.

Contents: Upon completion of this subject, a student shall be able to:

- State the role of good record keeping in farm management.
- Identify, collect, collate, record and file physical records for the farm.
- Identify, collect, collate, record and file financial records for the farm.
- Carry out banking procedures for a farm business.
- Use manual cashbook procedures to record financial transactions.
- Use computer software to record financial transactions.
- Organise financial records to a stage suitable for use by accountants and lenders.
- Prepare a cash flow statement.

Duration: 60 hours

AGC006 — Soil Science

Prerequisites: Nil

Purpose: This subject aims to provide students with a clear understanding of the role and function of soil as a natural resource and as a medium for plant growth, and to enable students to describe the physical, chemical and biological properties of soils, and relate such to plant growth and land use patterns, after considering the major soil types in Tonga.

Contents: Upon completion of this subject, a student shall be able to:

- Explain what is soil, its formation, classification and typical profile in the Tongan Landmass.
- Describe the major soil types in Tonga.
- List the physical properties of soils and describe the effects of such properties on plant growth.
- Explain the chemical properties of soils and relationship to plant growth.
- List the major macro elements and important micro elements essential to plant growth.
- Discuss the role of soil organisms and their beneficial or negative effect on the growth of higher plants.
- Describe the importance of soil organic matter, its sources and its influence on soil properties.
- Explain the nature and relationship of soil water in terms of soil water movement and availability to plants.
- Describe the nature of air occurring in the soil, its effects on biological activity and plant growth.
- Discuss soil erosion, types, mechanism causes and techniques for control.
- Explain soil and water pollution, sources of and the behavior of contaminants in the soil (i.e. pesticides).
- Discuss soil fertility, techniques used for assessing nutrient levels and strategies to correct nutrient deficient soils.
- Discuss traditional Tongan farming practices and maintenance of soil fertility.

Duration: 60 hours

AGRICULTURE DIPLOMA COURSE CATALOG

AGC011B — Farm Management Decisions

Prerequisites: Farm Management Records

Purpose: This subject aims to introduce students to the skills and techniques of managerial decision-making in the farm context. Using both production and business skills they should be able to evaluate the performance of a farm business and use recognized techniques to plan for its future.

Contents: Upon completion of this subject, a student shall be able to:

- Discuss the decision-making role of the farm manager.
- State the importance of understanding the goal of the farm business.
- Describe the decision-making process and its place in business planning.
- Evaluate the physical performance of a farm business through monitoring of inputs, outputs of its physical resources.
- Apply the techniques of cash-flow and gross margin budgeting.
- Evaluate the financial performance of a farm business through analysis of financial statements using recognized techniques.
- Apply the principles of investment to farming.
- Apply the principles of debt finance to farming.
- Compare machinery purchase with machinery rental costs.
- Explain the process of land valuation.
- Develop a plan for improved farm business performance.

Duration: 60 hours

AGC021 — Business Management

Prerequisites: Nil

Purpose: This subject aims to provide students with skills and knowledge to operate a small business related to agriculture. The subject will be interdisciplinary will focus on practical and commercial skills and knowledge.

Contents: Upon completion of this subject, a student shall be able to:

- Analyse business risk and the ways of coping with it.
- State the forms of business structure that are possible and the advantages and disadvantages of each.
- Develop and implement a business plan, which includes marketing, production and financial aspects.
- Participate in management functions including those of group work and leadership.
- Participate in meetings.
- Use budgeting techniques to manage cash flow.
- Analyse and report, orally and in writing, on business performance.

Duration: 60 hours

AGC022 — Agricultural Marketing

Prerequisites: Agricultural Economics

Purpose: This subject aims to provide students with skills and knowledge of the marketing strategies and techniques appropriate to agricultural products and services, both locally and internationally.

Contents: Upon completion of this subject, a student shall be able to:

- Define the unique characteristics of agricultural marketing within the marketing discipline.
- Develop a marketing plan for an agricultural product or service.
- Develop strategies to monitor and evaluate a marketing plan.
- Describe the marketing systems serving the agricultural industries.
- Explain the importance of product specifications and quality control.
- Discuss the ethical and social responsibilities that marketing creates.

Duration: 60 hours

AGC017 — Introduction to Human Resource Management

Prerequisites: Nil

Purpose: This subject aims to introduce students to the principles and practices of human resource management, relevant to being an employee in an Organization and also appropriate to those with supervisory responsibilities.

Contents: Upon completion of this subject, a student shall be able to:

- Provide leadership, supervision & direction to staff, including the use of teambuilding skills.
- Identify training needs and relevant provision.
- Plan and describe the steps to implement innovative and efficient work practices.
- Be familiar with the procedures of employee recruitment, induction and termination.
- Recognize conflict in the workplace, propose strategies to deal with it and use communication skills that facilitate constructive responses to conflict in the workplace.

Duration: 60 hours

AGC019 — Plant and Animal Products and Processing

Prerequisites:	A satisfactory knowledge of the organic compounds found in foods, of human and animal nutrition and of the nature of crop and animal production is assumed. Students will normally have completed AGC002A Inorganic Chemistry, AGC002B Biological Chemistry, AGC012A Animal Nutrition and Breeding, AGC012B Animal Health, AGC013A Crop Protection, AGC013B Crop Improvement and AGC016 Agriculture, Food and Health.
Purpose:	This subject aims to provide students with knowledge and understanding of the methods and technologies available for processing agricultural products with a view to reducing spoilage and health risks and to enhancing value in the form of quality food products.
Contents:	Upon completion of this subject a student shall be able to: <ul style="list-style-type: none">• Describe the factors which influence consumer preferences for foods.• Compare fresh agricultural products and processed foods derived from them with respect to consumer preference, nutritional value, shelf life, health and safety considerations.• Define the terms, customer, product specification, conformity, quality, quality assurance, and quality control in the context of selected agricultural products and foods.• Be conversant with food regulations as they apply to fresh and processed foods.• Describe the production, harvesting and processing of selected agricultural products and explain the factors which contribute to the achievement of quality parameters within the fresh and processed product.• Explain the role of chemical, physical, biological, microbiological factors on food quality.• Apply the principles of HACCP to the production and processing of a food product.• Describe the techniques used to process and preserve foods and explain how these techniques operate.• Describe the process of product development.• Evaluate proposals for new food products and new food production and processing technologies against technical, nutritional, marketing and regulatory criteria.
Duration:	60 hours

AGC020 — Rural Development

Prerequisites:	Communication Skills is a pre-requisite subject. Introduction to Human Resource Management is a co-requisite subject.
Purpose:	This subject aims to provide students with the basic knowledge and skills to be a competent extension/rural development practitioner.
Contents:	Upon completion of this subject, a student shall be able to: <ul style="list-style-type: none">• Recognize the influence on people's behavior of the groups to which they belong, the organizations of which they are part, and the society in which they live, in the context of rural development in Tonga.• Use a range of communication methods, and provide leadership in the conduct of extension rural development activities.• Plan and implement an appropriate village level extension or rural development project.
Duration:	90 hours

0013A — Crop Protection

Prerequisites: Nil

Purpose: This subject aims to provide students with skills and knowledge to identify and apply appropriate pest management techniques required for crop protection.

Contents: Upon completion of this subject, a student shall be able to:

- Distinguish organisms considered as pests of crops in Tonga.
- Explain why each pest is considered a threat in a particular situation, by describing its effects on the crop.
- Evaluate plant protection procedures and options from a cultural and regulatory prospective.
- Appreciate the pest control options and techniques available to a specific group of pests (Biological, physical, crop resistance or tolerance and chemical methods of pest control for crops).
- Explain the application of control techniques to specific groups of pests and recognize the importance of using a combination of methods to ensure an integrated approach to pest management.
- Describe pesticide application methods and factors influencing choice.
- Demonstrate safe use, handling and application procedures of pesticides and other agricultural chemicals to minimize risks to the operator and damage to the environment.
- Relate the economic and ecological considerations for pest management programs and social impact on local, national and world production.

Duration: 30 hours

AGC018 — Project

Prerequisites: The project is taken in the last year of the Diploma course and therefore it can be assumed that candidates have a sound knowledge of crop and animal production, farm management and applied sciences.

In semester 5 of the Diploma course, students will undertake the subject AGC 015 Biometrics (Research Methods) which will introduce them to the processes and techniques required for systematic investigation of a problem as is required in this subject.

Purpose: This subject aims to provide students with:

- Experience in applying systematically procedures and techniques of investigation.
- An opportunity to develop skills in managing the activities within a project.
- Practice in problem solving skills.
- An opportunity to integrate various aspects of agriculture and related industries studied previously in the course.
- Scope to pursue an investigation in an area of special interest.

Contents: Upon completion of this subject a student shall be able to:

- Identify a specific problem relevant to agricultural or related industries and worthy of investigation.
- Formulate a logical program of investigation directed towards the problem.
- Design experimental or investigatory procedures appropriate to the questions posed by the problem.
- Carry out experimental or investigatory procedures relevant to the problem.
- Collect, process and analyse the results of the investigation using appropriate techniques
- Evaluate the significance of the findings of the investigation in the light of previous knowledge and the limitations of the methodology employed in the investigation.
- Present the findings of the investigation in accordance with the accepted conventions and format.
- Prepare a written report of the investigation.
- Present a summary of the findings.
- Demonstrate an understanding of the interaction of technical, economic, environmental, human and political considerations as they may impinge on the problem.

Duration: 9 hours

AGC00A — Industry Based Work Experience

Prerequisites: Nil

Purposes: This exercise aims to provide students with an experience and opportunity of employment in an agricultural or related industry

- to practice and enhance skills relevant to agricultural production and related activities
- to develop new skills
- to take responsibility for their own and other's actions
- to see the impact of their activities on the operation of an agricultural enterprise
- to observe the role of the individual and the group within the workplace
- to develop a work ethic acceptable to employers in the agricultural sector
- to develop skills in communication and effective interaction with people in the workplace
- to become familiar with the routine practices of a unit within an agricultural or related industry
- for observation and analysis of the processes within a unit of an agricultural or related industry
- to identify the factors which influence production and other activities within the workplace
- to relate the role of an individual unit within an industry to the industry situation at large
- to appreciate the nature of interactions which occur within Organizations such as workplaces

Contents: Upon completion of this exercise a student shall be able to:

- Work productively and safely within a position in an agricultural or related industry.
- Work co-operatively with colleagues in the workplace and related Organizations.
- Take responsibility for their actions and the actions of any workers under their direction.
- Act in a professional manner with respect to information, finance and personnel.
- Describe, explain and justify the operations, routines and practices of an agricultural or related enterprise.
- Analyse the production process within an agricultural or related enterprise and identify the factors which significantly affect production output and efficiency.
- Describe and explain the industry context within which the agricultural or related enterprise operates.
- Describe and explain the Organizational and management interactions which occur within the workplace.
- Propose logical and appropriate solutions to problems identified within the workplace.

Duration: Four placements, each consisting of a four week period.

INFORMATION TECHNOLOGY

PROGRAM DESCRIPTION

The Information Technology Program is a full-time program of instruction designed to meet the growing demand for technologically adept employees in the work place and prepare students for further studies in the field of Information Systems and Computer Science.

Graduates of the course are ideal candidates for positions such as assistant computer programmer, computer operator, help desk support, user support, information systems analyst, network administrator, technician, and teacher

There are 2 different programs of study in the Information Technology Program:

1. The Information Systems Program is designed to provide a strong understanding in a wide range of subjects related to the management of information through computer technology. It provides a solid foundation from which to build a career in the field of Information Systems.
2. The Computer Science Program is designed to provide a strong understanding in the study of computers including both hardware and software design. It provides a solid foundation from which to build a career in the field of computer science.

Information Systems – Certificate Program

This program is a one-year program of study. It is a full-time program.

Information Systems – Diploma Program

Students who achieve a Certificate in Information Systems may pursue a Diploma in Information Systems.

This program is a two year program of study. It is a full-time program.

Computer Science – Certificate Program

This program is a one year program of study. It is a full-time program.

Computer Science – Diploma Program

Students who achieve a Certificate in Computer Science may pursue a Diploma in Computer Science.

This program is a two year program of study. It is a full-time program.

ENTRY REQUIREMENTS

Certificate Program

Applicants must have satisfied one of the following requirements:

- Completed Form 6 with a total grade of 15 or less (English, Mathematics + 3 best subjects). Preference is given to applicants who have taken computer studies.
- Have relevant years of computer experience indicative of likely success in the program.

Applications are accepted at the beginning of each school year. Students may only enter school during the official admissions period.

Applicants are also interviewed prior to acceptance.

Most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

Diploma Program

Students wishing to enroll in the Diploma in Information Technology Program must have successfully achieved a Certificate in Information Technology.

Again, most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

ARTICULATION AND CREDIT TRANSFER

Certificate Program

Graduates of a certificate program are eligible for enrollment in the diploma program with a full credit transfer.

Also, the following courses are accredited at the University of the South Pacific:

TIHE Course

IT131 Mathematics for Science
IT133 Introductory Statistics
IT141 Information Systems
IT142 Introduction to Programming: VB.Net
IT151 Introduction to Programming: Java
IT152 Data Structures & Algorithms

University of the South Pacific

MA102 Mathematics for Science
MA131 Introductory Statistics
CS121 Introduction to Information Technology
CS122 Information Systems II
CS111 Introduction to Computing Science
CS112 Data Structures & Algorithms

Diploma Program

The following courses are accredited at the University of the South Pacific:

TIHE Course

IT235 Discrete Mathematics
IT244 Database Management Systems
IT245 Management Information Systems
IT253 Computer Organization
IT254 Design & Analysis of Algorithms
IT256 Advanced Programming: VB.NET
IT262 Principles of Management

University of the South Pacific

MA261 Discrete Mathematics
CS222 Database Management Systems
CS221 Distributed Information Systems
CS211 Computer Organization
CS214 Design & Analysis of Algorithms
CS224 Advanced Database Systems
MG101 Introduction to Management

PROGRAM TIMETABLE

Information Systems – Certificate Program

Semester 1

- IT131 – Mathematics for Science
- IT141 – Information Systems
- IT161 – Professional Communications

Semester 2

- IT133 – Introductory Statistics
- IT142 – Introduction to Programming: Visual Basic .Net
- IT162 – IT Research Project

Information Systems – Diploma Program

Semester 1

- IT233 – Applied Statistics
- IT244 – Database Management Systems
- IT256 – Advanced Programming: Visual Basic .Net

Semester 2

- IT235 – Discrete Mathematics
- IT245 – Management Information Systems
- IT262 – Principles of Management

Computer Science – Certificate Program

Semester 1

- IT131 – Mathematics for Science
- IT141 – Information Systems
- IT151 – Introduction to Programming: Java

Semester 2

- IT133 – Introductory Statistics
- IT142 – Introduction to Programming: Visual Basic .Net
- IT152 – Data Structures and Algorithms

Computer Science – Diploma Program

Semester 1

- IT244 – Database Management Systems
- IT253 – Computer Organization
- IT256 – Advanced Programming: Visual Basic .Net

Semester 2

- IT235 – Discrete Mathematics
- IT254 – Design and Analysis of Algorithms
- IT255 – Special Topics

INFORMATION TECHNOLOGY CERTIFICATE COURSE CATALOG

IT131 — Mathematics for Science

Prerequisites: Nil

Purpose: To ensure that students are able to accomplish problem solving using different mathematical equations and techniques.

Content:

- Mathematical Modeling — Know what problem solving is, and to know how to use and to be able to attend to word problems using simple applications
- Logic — Propositions and compound propositions, Logical operations, Truth Tables, Tautology and Contradictions, Logically Equivalences, Algebra of Propositions, Conditional and Bi-conditional Statements, Logical Implication, Propositional Functions.
- Linear Algebra — Solving systems of linear equations using Matrices: Row Operation, Determinants, and Inversions
- Mathematical Functions – Exponential and Logarithmic, Derivatives and Techniques of differentiation, definite integrals and methods of integrations, inverse functions.

Duration: 60 hours

IT133 — Introductory Statistics

Prerequisites: Nil

Purpose: This course is designed to introduce students to basic statistics using simple ideas in probability and statistical data calculations and equations.

Content:

- Rounding off numbers, use of calculator, metric units, descriptive statistics, organizing data, use of graphs, charts, histograms and frequency distributions.
- Measures of central tendency; the mean, median and mode; cumulative frequency tables, graphs and percentiles, standard deviation and variance.
- Introductory probability and probability rules.
- Distribution of random variables.
- Probability distributions
- Sampling theory and estimation parameters.
- Tests of hypothesis.
- Regression and correlation.

Duration: 60 hours

IT141 — Information Systems

Prerequisites: Nil

Purpose: To provide Certificate level students with an introduction to the field of computers and information technology.

Content: An overview of computer systems and the field of information technology including introductory work with Microsoft Office applications. Other topics will include hardware, software, file management, the Internet, networking, HTML, information systems theory, databases, programming and additional topics that will cover rapidly evolving field in computer science such as Linux operations and Internet programming.

Duration: 60 hours

IT142 — Introduction to Programming: Visual Basic.NET

Prerequisites: IT141 — Information Systems

Purpose: Students will be able to create professional grade software applications using the Visual Basic.Net programming language.

Content: This course introduces students to the fundamental concepts of program design using the Visual Basic.Net programming language. It emphasizes the design process, producing elegant, well-documented and easily maintainable programs. Elements of object-oriented programming are introduced.

Students will design, code, test, debug, and document Visual Basic.Net programs. The course will also address program design and program style.

Duration: 60 hours

IT151 — Introduction to Programming: Java

Prerequisites: Nil

Purpose: Students will be able to create software applications using the Java programming language and object oriented programming techniques.

Content: This course introduces students to the fundamental concepts of program design using the Java programming language. It emphasizes the design process, producing elegant, well-documented and easily maintainable programs. Elements of object-oriented programming are introduced.

Students will design, code, test, debug, and document Java programs. The course will also address program design and program style.

Duration: 60 hours

IT152 — Data Structures and Algorithms

Prerequisites:	IT151 — Introduction to Programming: Java
Purpose:	To provide students with a solid understand of data structures and the algorithms used to work with the data in them.
Content:	This course introduces data structures and algorithms as used in computer programming. Topics include arrays, sorting, stacks, queues, linked lists, iteration, recursion, binary trees, and hash tables as well as when to use each data structure. Algorithms used to manipulate the data within data structures are also examined.
Duration:	60 hours

IT161 — Professional Communication

Prerequisites:	Nil
Purpose:	This course is designed to develop the students' ability to communicate positively and effectively both, orally and in written form in their working environment.
Content:	Content includes, definition of terms, theory of communication, qualities of good communication, oral communication (general, telephone technique, non-verbal communication), Written communication (letter writing, orders, instructions, notices, report writing, memos, messages), Meetings (Agenda, Procedure, and Minutes)
Duration:	60 hours

IT162 — Information Technology Research Project

Prerequisites:	Nil
Purpose:	This course is intended for students to gain key skills in basic research that will enable them to conduct basic research tasks in the workforce. The nature of the course is also designed in such a way that students wishing to pursue further study will be able to carry out basic research in academia.
Content:	This course is to provide students with basic knowledge in the following areas of research: <ul style="list-style-type: none">• Theoretical background to qualitative and quantitative research perspective• Research problems• Designing research questions and hypotheses• Sampling procedures• Proposal writing.• Research tools• Field work• Data analysis• Writing a research report
Duration:	60 hours

INFORMATION TECHNOLOGY DIPLOMA COURSE CATALOG

IT233 — Applied Statistics

Prerequisites: IT133 — Introductory Statistics

Purpose: The course is designed to train students to use effectively commonly employed methods of statistical analysis and to give them an insight into the mathematical and statistical reasoning behind these methods

Content: Combinations and permutations, conditional probability, some important discrete distributions: geometric, Pascal, hypergeometric, binomial, multinomial; sampling distributions; estimation, confidence interval; significance tests involving means, proportions and variances; simple linear regression and its tests; analysis of variances; one and two factor designs; basics of Bayesian inference Non-parametric methods.

Duration: 60 hours

IT235 — Discrete Mathematics

Prerequisites: IT131 — Mathematics for Science

Purpose: Discrete mathematics has many applications including mathematics, computer science, physics, chemistry and economics, however, the applications covered will focus on computer science and mathematics.

Content:

- Topic 1: The foundation — Logic, Sets and Functions — Logic, Propositional Equivalences, Predicates and Quantifiers, Sets, Set Operations, Functions, Sequence and Summations
- Topic 2: The fundamentals — Algorithms, the Integers and Matrices — Algorithms, Complexity of Algorithms, Integers and Division, Integers and Algorithms, Application of A-Umber Theory, Matrices
- Topic 3: Counting — The Basics of Counting, the Pigeonhole Principle, Permutation and Combination, Discrete Probability, Probability Theory, Generalize Permutation and Combination.
- Topic 4: Advanced Counting Techniques — Recurrence Relations, Solving Recurrence Relations, Divide-and-Conquer Relations, Generating Functions, Inclusive-Exclusive, Application of Inclusion-Exclusive.
- Topic 5: Graphs — Introduction to Graphs, Graphs Terminology Representing Graphs and Graph Isomorphism. Connectivity, Euler and Hamilton Paths, Planar Graphs, Graph Coloring.
- Topic 6: Trees and Modeling Computation — Trees and Sorting, Spanning and Minimum Spanning Trees, Language and Grammars, Finite-State Machines with and without Output.

Duration: 60 hours

IT244 — Database Management Systems

Prerequisites:	IT141 — Information Systems IT142 — Introduction to Programming: Visual Basic .Net
Purpose:	To prepare students to use real world database systems as well as possess the underlying theory.
Content:	<ul style="list-style-type: none">• Introduction to Database Systems• Entity – Relationship Data Model• Relational Data Model• Other Data Models• Relational Algebra• Database Language SQL• Constraints and Triggers• System Aspects of SQL
Duration:	60 hours

IT245 — Management Information Systems

Prerequisites:	IT141 — Information Systems
Purpose:	This course is designed to familiarize students with the management of concepts and practice of Information System.
Content:	This will cover a range of topics such as Foundation concepts of IS plus their fundamental behaviors and technical concepts. It will allow students to become familiar with up-to-date trend of technology in the form of hardware, software, networks and data communication and management, application of IS to operations, management and strategic advance of business and developing of IS solutions to solve business problems, decision making, AD-HOC resources and strategies.
Duration:	60 hours

IT253 — Computer Organization

Prerequisites: IT152 — Data Structures and Algorithms

Purpose: Knowledge of computer organization is necessary for people who design or need in-depth knowledge of computer systems. This course aims to provide a basic understanding of computer organization and its analysis. It provides a general foundation for further specialized study.

Content:

- Data Representation (binary, hexadecimal, floating point, ASCII)
- Memory and Bit Operations (stack, heap, pointers, memory addressing, bit operations)
- Logic (Boolean logic, De Morgan's Laws, Truth Table, Gates)
- Instruction Set Architectures and MIPS (different ISA's, instruction formatting, MIPS assembly programming)
- Computer Arithmetic (building gates to make adders)
- Processor Datapath and Control (in-depth look at single-cycle processor design)
- Memory (caches, RAM, memory hierarchy, replacement policy, code improvement)
- Virtual Memory (TLBs, page tables, memory spaces)
- Input/Output (keyboards, mouse, buses, hard disks)

Duration: 60 hours

IT254 — Design and Analysis of Algorithms

Prerequisites: IT152 — Data Structures and Algorithms

Purpose: To study classical algorithms for solving real world problems in terms of programmatic technique as well as asymptotic analysis. Critical thinking skills are developed through using different techniques to solve new problems.

Content:

- Growth of functions, Summations, Recurrences
- Sorting — Bubble Sorting, Heap Sorting, Quicksort, Sorting in Linear Time
- Data Structures — Hash Tables, Binary Search Trees, Red-Black Trees
- Advanced Design Techniques — Greedy Algorithms, Huffman Codes, Amortized Analysis
- Graph Algorithms — Elementary Graph Algorithms, Representation of Graphs, Breadth first, Depth First, Single Source Shortest Path, Dijkstra
- Matrix Operations — Properties of Matrices, Strassen's algorithm, Solving systems of linear equations
- NP Completeness — Polynomial v. NP time, NP Completeness
- Cryptography — Symmetric Encryption, Public Key Encryption

Duration: 60 hours

IT255 — Special Topics

Prerequisites: Nil

Purpose: To enable CS students to be aware of cutting edge technologies in the rapidly evolving field of Information Communication Technologies. Courses will grow to fit Tonga's changing needs. They will also reflect particular strengths of current TIHE staffing.

Content: To be determined.

Duration: 60 hours

IT256 — Advanced Programming: Visual Basic .Net

Prerequisites: IT142 — Introduction to Programming: Visual Basic .Net

Purpose: Students will develop a basic understanding of Object Oriented Programming, and further develop their programming skills and knowledge in Visual Basic .Net.

Content: This course provides students the opportunity to develop their programming skills by understanding Object Oriented Programming fundamentals, using Visual Basic Programming forms, controls, and menus. Student also learn how to manage projects, create user friendly interfaces, process drives, folders and files, use ADO .Net data controls and other VB.net controls. They also use SQL in developing Visual Basic applications, handle errors and distribute applications.

Duration: 60 hours

IT262 — Principles of Management

Prerequisites: IT161 — Professional Communications

Purpose: To prepare students to make effective managerial decisions by being versed in a variety of productive and relevant organizational management techniques.

Content:

- Introduction to business management
- The business environment
- Employee-employer relations
- The impact of change on business organizations
- Overview of principles of management
- Business planning
- Problem Solving in Organizations
- Leading and Motivating People in Organizations
- Controlling Performance

Duration: 60 hours

TOURISM AND HOSPITALITY

PROGRAM DESCRIPTION

The Tourism and Hospitality Program is a full-time program designed to train post-secondary students seeking a career in the tourism and hospitality industry. Emphasis is given to the development of skills and technical knowledge as well as personality traits, attitudes and work habits that will be beneficial to the student's career and to society in general.

The Tourism and Hospitality Program awards a Certificate in Tourism and Hospitality.

Certificate Program

The certificate program is designed to allow students:

- To develop an interest in a career and to make an informed choice of vocation or trade.
- To develop skills and technical knowledge necessary for employment at operative and skilled levels in their choice of vocation or trade.
- To develop personality traits, attitude and work habits that will be beneficial to the student's future life.
- To permit continuation of tertiary studies into apprenticeship or higher level programs through alternative pathways.

This is a 1 year program. Students must pass all certificate level courses listed in the course catalog to be awarded a Certificate in Tourism and Hospitality.

ENTRY REQUIREMENTS

Certificate Program

This program is intended for school leavers that have successfully completed the Tonga School Certificate or higher qualifications. Preference is given to students with high marks in English.

Also, most of the reading material and all assessments are conducted in English. Therefore, prospective students should be proficient in the English language.

WORK EXPERIENCE PROGRAM

Students are expected to learn and perform various skills through internships. Details for the industrial placements will be issued at the appropriate time.

All requirements for industrial placements must be completed in order for a student to be eligible for the Certificate award in Tourism and Hospitality Studies.

PROGRAM TIMETABLE

Certificate Program

Semester 1

- CRT1 – Communication Skills
- CRT2 – The Tourism & Hospitality Industry
- CRT3 – Occupational Health, Safety & First Aid
- CRT4 – Work and Personal Effectiveness Skills
- CRT5 – Destination Info Advice in Tonga
- CRT6 – Product Knowledge
- CRT7 – Information Technology
- CRT8 – Airport Operations and Facilities & Assistance
- CRT9 – Food Science & Hygiene Practices
- Industrial Placements (4 weeks)

Semester 2

- CRT10 – Tour Guide
- CRT11 – Tour Commentaries and Interpretive Activities
- CRT12 – Process Financial Transaction
- CRT13 – Front Office Operation
- CRT14 – Process Non-Air Documentation
- CRT15 – Food Preparation
- CRT16 – Food & Beverage Services
- CRT17 – Patron Care
- Industrial Placements (4 weeks)

TOURISM AND HOSPLITALITY CERTIFICATE COURSE CATALOG

CRT1 – Communication Skills

Purpose: This subject will provide the student with the ability to communicate positively and effectively, both orally: as in telephone techniques, how to deal with difficult customers written as in business correspondence.

Duration: 40 hours

CRT2 – The Tourism Industry

Purpose: This subject will provide the student with tourism industry knowledge. The student will be introduced to the tourism facet of the industry and the broad understanding of the various sectors of the Tourism industry.

Duration: 24 hours

CRT3 – Occupational Health & Safety

Purpose: This subject will provide the student with an understanding of the concept of Health and Safety and the ability to recognize and implement sound health and safety practices into the work environment.

Duration: 18 hours

CRT4 – Tourism Cultural Awareness

Purpose: This subject will provide students with the ability to work with customers from diverse social and cultural backgrounds and to deal with cross-cultural misunderstanding.

Duration: 20 hours

CRT5 – Work and Personal Effectiveness Skills

Purpose: This subject will provide the student with the knowledge, skills and attitudes to recognize and deal constructively with planning personal and vocational goals. The students are given the chance to reflect on their own attitude, self awareness and asserting skills, areas such as cooperation and team concept, time management, planning and goal setting, motivation and productivity are also explored.

Duration: 30 hours

CRT6 – Destinations Information Advice in Tonga

Purpose: This subject will provide students with necessary information on how to access, gather, maintain, update and provide basic tourism-related information to visitors about Tonga.

Duration: 15 hours

CRT7 – Promote Tourism Products and Service

Purpose: This subject will provide the student with knowledge of the Tourism products and service available in Tonga. This will enable them to identify the visitor's needs and wants and to promote tourism products and services.

Duration: 15 hours

CRT8 – Computing

Purpose: This subject is designed to provide students with skills on how to process documents on computer. It is also provide student with occupational health and safety working techniques.

Duration: 30 hours

CRT9 – Visitor Market Knowledge

Purpose: The module will provide student with skills to be able to develop and discuss tourism-related information about overseas visitor markets to the Kingdom of Tonga.

Duration: 12 hours

CRT10 – Airport Operations and Facilities

Purpose: The subject will provide student with broad overview of the airport terminal; its operation, facilities and passengers' movement through the airport.

Duration: 15 hours

CRT11 – Arrival and Departure Assistance

Purpose: This subject will provide the student with skills and knowledge on how to assist customers on arrival and departure transfers, deliver arrival information to visitors.

Duration: 15 hours

CRT12 – Food Science & Hygiene Practices

Purpose: This module is designed to assist students to understand the basic hygiene practices used when operating in a small restaurant situation.

Duration: 20 hours

CRT13 – Tour Guide

Purpose: This subject will provide the student with an understanding of the roles and responsibilities of a tour guide.

Duration: 30 hours

CRT14 – Tour Commentaries

Purpose: The module will provide student with appropriate skills and knowledge to be able to explain the purpose of interpretive activities, prepare and present an interpretive activity to customers.

Duration: 45 hours

CRT 15 – Process Financial Transactions

Purpose: This subject will provide the student with skills and understanding of how to process and balance basic financial transactions relevant to the travel and tourism industry.

Duration: 15 hours

CRT 16 – Office Operation

Purpose: The subject is designed to provide student with skills to process and maintain office documentation. It is also enable students to identify and operate office equipment efficiently and safety.

Duration: 30 hours

CRT17 – Prepare Quotations

Purpose: The subject will provide students with skills to be able to prepare Tour Quotations for customers.

Duration: 10 hours

CRT18 – Non-air Documentation

Purpose: This subject will provide student with skills to be able to issue product and service vouchers for accommodation, car hire, tours etc.

Duration: 30 hours

CRT19 – Food Preparation

Purpose: The subject will provide the student with skills and knowledge relevant to an initial understanding of kitchen operations and career opportunities in the food production area of the hospitality industry.

Duration: 50 hours

CRT20 – Food and Beverage Services

Purpose: This subject will provide the student with an understanding of the ability in practice the basic duties of a bar attendant/wine waiter/waitress. It will also introduce them to the knowledge and skills to apply the basic principles of food service.

Duration: 30 hours

SCHOOL POLICY

SCHOOL FEES

All students are required to pay a fee of \$115. This fee must be within the first 4 weeks of each semester to the Accounts Section at the main office.

Additional fees may be levied to cover the costs of registration, identification cards and maintenance of the computing facilities.

Students with delinquent accounts are not eligible to take final exams and will not be issued transcripts.

REGISTRATION

- a) A student must register each semester for the duration of the program.

ASSESSMENT

- a) Performance in a course shall be acknowledged by the awarding of specific letter grades:
 - Distinction (D) 80% - 100%
 - Credit (C) 65% - 79%
 - Pass (P) 50% - 64%
 - Fail (F) Less than 50%
- b) Assessment will be continuous and may include assignments, tests, and a final examination, depending on the subject. The grade for any subject will comprise of not less than 40% and not more than 60% of continuous assessment, with the balance allotted to the end of semester examination.
- c) Students must complete course requirements as form part of the continuous assessment process during the semester. Students may be required to attain a specific minimum standard of performance and participation in the continuous assessment and/or at the final examination.
- d) A student must sit the final examination, which is conducted at the end of each course. Students must obtain a mark of at least 50% for the examination in that course.
- e) A student must attend 80% of the allocated classes to be eligible for the final examination.
- f) Submitted assignments and materials must be handed in on or before the due date. Marks will be deducted for late submissions of assignments.
- g) A student may apply in writing to the Principal of the TIHE for a re-evaluation of his/her final grade for a particular module no later than one week after the results have been issued. All applications for re-evaluation must be accompanied by a fee of \$5.
- h) Supplementary exams are not offered.
- i) Some programs require students complete details on the Assignment Title Page form before submitting their assignments. These forms are available from the program coordinator.

SATISFACTORY ACADEMIC PROGRESS

- a) Satisfactory progress is defined as the achievement of a cumulative mark average of 50%.
- b) A student who achieves a cumulative mark average of 50% is in good academic standing.
- c) A student who fails to achieve a cumulative mark average of 50% shall be placed on probation.
- d) A student who, while on probation, fails to achieve a semester mark average of 50% shall be suspended for 1 semester.
- e) A student who has been suspended twice for unsatisfactory academic progress will not be readmitted.

PLAGIARISM

- a) TIHE follows a strict policy that forbids cheating under all circumstances. Each instance of cheating will be reported by the teacher to the principal.
- b) Persistent intentional acts of plagiarism will subsequently result in the following schedule:
 - First offense: Warning from the tutor.
 - Second offense: Warning from the principal.
 - Third offense: Expulsion.
- c) These acts are defined as act of plagiarism:
 - Exams and Tests
 - Impersonating someone in an examination test.
 - Copying from another student, or making information available to another student.
 - Submitting a take-home examination written, in whole or in part, by someone else.
 - Failing to obey or comply with exam regulations or instructions of an examination supervisor.
 - Using unauthorized resources (egg. electronic dictionaries, palm pilots, mobile etc) to obtain answers during exam and tests.
 - Buying or selling or stealing exam papers or assignments and submitting them as one's own for the purpose of plagiarism.
 - Essays and Assignments
 - Using direct quotations for large sections of paraphrased material (from books, articles, web pages, lecture notes etc) without due acknowledgement and references in the source.
 - Submitting an essay written in whole or in part by someone else as one's own.
 - Preparing an essay or assignment for submission by another student.
 - Copying an essay or assignment, or knowingly allow one's essay or assignment to be copied.
- d) Students may appeal these charges:
 - Students may appeal to your lecturer within two days of
 - Receiving a report made by the teacher in the first offense.
 - Receiving a warning from the principal in the second offense.
 - If not satisfied, you may appeal to your Principal within 5 days of
 - Receiving the report made by the teacher in the first offense.
 - Receiving a warning from the principal in the second offense.

WITHDRAWAL

- a) A student must inform the program coordinator of his/her intention to withdraw from a module by completing a Student Withdrawal Form.
- b) All books, equipment and materials issued by the TIHE relevant to that module must be returned.
- c) Any student who wishes to withdraw from any course may do so within the first four weeks.
- d) A student may be barred from further enrollment if he/she withdraws without informing the program coordinator.
- e) A student will be deemed to have withdrawn from the program if he/she fails to attend five consecutive classes without prior notification to the program coordinator.

CREDITS AND EXEMPTIONS

- a) Students may be entitled to apply for exemption from a module, on the basis of previous study or substantial relevant experience. A student wishing to apply for a cross credit or exemption must apply to the Principal of the TIHE with the application form for entry into the program.
- b) Applications for exemption or cross crediting must be made on the Cross Credit Application Form accompanied by documentary evidence of the content and standard of the previous module or program of study. Documentary evidence includes handbooks and module outlines. Certificate, diplomas and result sheets will be insufficient on their own for

exemption/cross crediting purposes. It is the responsibility of the student to provide this documentary evidence in sufficient time to allow an assessment to be made before the commencement of the program or module.

- c) Students should see the program coordinator for details of the cross crediting procedures
- d) A student will only be exempted from taking a module if the previous module he/she has taken meets a minimum of 80% compatibility. Less than 80% compatibility means that the student will be graded for the subject by attending classes and undergoing assessment. However, some relief from class attendance may be granted for particular topics which have been previously studied.
- e) Assessment instruments will ensure that the student outcomes from the module are comparable to the level expected in the module from which the exemption is being claimed.
- f) Exemptions from any module will only be considered if previous studies are not more than eight years old.
- g) An Exemption Test is an assessment instrument used at the beginning of a program which is designed to establish if a student entering a program of study already has the knowledge and skills required by the program (or individual module).
- h) All applications for an Exemption Test must be considered by the Examination Committee of the TIHE.
- i) An Exemption Test could be granted and administered in the following circumstances:
 - a. When a student has studied a similar subject but with less than 80% compatibility.
 - b. When a student claims to have attained the required knowledge and skills through on the job training or experience. This must be supported by documentary evidence from current or past employers.
 - c. When previous studies are more than 8 years old but the student can demonstrate that he/she has been able to keep up to date through work experience or some other means.
 - d. The grade given for successfully undertaking an Exemption Test will be a PASS regardless of the students' score on the assessment instrument.

RESOURCE CENTRE

- a) The TIHE Resource Centre provides all students with access to relevant textbooks and journals.
- b) The TIHE Server room provides IT students with access to reference manuals.
- c) A student is able to borrow books subject to the approval of the program coordinator.
- d) A student must sign and date the Borrower's Book for books taken.
- e) Journals may not be borrowed but may be used in the Resource Centre.
- f) Books may be borrowed for up to two weeks subject to availability of additional texts of the same book.
- g) The program coordinator has the right to restrict borrowing rights to overnight or on-site access.
- h) Books not returned within the specified borrowing period will result in a fine or a restriction on the student's other borrowing privileges and the non-release of that student's results.
- i) Requests for loan extensions are granted if no one is waiting for the item.
- j) A security deposit may be required for certain books.

STUDENT DISCIPLINE

- a) Students must at all times ensure that the property of the Government is properly maintained, that the health and safety of themselves and other individuals is not put at risk, and that the orderly conduct of programs of instruction are not interfered with in any way.
- b) Student must maintain a high standard of behavior at all times and must not indulge in any act which may result in damage to Government property, or unduly interfere with the conduct and convenience of other students or staff.
- c) Students must maintain an acceptable standard of dress while attending classes or studying on TIHE premises.
- d) Students are not allowed to eat, drink or smoke in the computer labs.
- e) The consumption of alcohol on campus is not allowed and offenders will be referred to the Student Services Committee for appropriate action.

- f) Littering on the campus is discouraged and all students are responsible for keeping the campus tidy and clean.
- g) Guests are not permitted to use the facilities at TIHE under any circumstances. If an individual does not have their TIHE identification on their person, they will be asked to leave the grounds.
- h) Student found attempting to steal equipment from the computing centers will be dismissed from school and banned from returning or re-applying. There are no mitigating circumstances in this case.

RESOLUTION PROCESS

- a) Resolution of the alleged misconduct must be attempted informally at source.
- b) If an informal resolution is not possible, the matter will be referred to the Principal of the TIHE who depending on the severity of the matter may recommend:
 - a. A reprimand and warning.
 - b. Suspension from the course of study.
 - c. Permanent expulsion from TIHE.

CONTACT INFO

Accounting Program Coordinator – Manu ‘Akau’ola – manu@tihe.org

Agriculture Program Coordinator – Siosi Tu’avao – tsiosi@tihe.org

Information Technology Program Coordinator – Edwin Liava’a – edwin@tihe.org

Tourism and Hospitality Program Coordinator – Lu’sa Taufatofua – luisa@tihe.org