

The Diploma in Computer Studies  
*At*  
The Computer College  
(Dubai)

In Association with  
Liverpool John Moores University  
(UK)

**Syllabus**

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<b>Course Code</b>	: CMSKF 0010
<b>Course Title</b>	: English I A
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course work Preparation</b>	: 20 Hours
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: Secondary School

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**Aims:**

- Introducing students to English System of Tenses so that they can describe people, things; tell past and contemporary events; and predict things in the future. In a word, independent speaking.
  - Functional Language: how they are going to use the living English language as far as vocabulary and grammatical forms are concerned.
  - Introducing them to Business English in terms of letter-writing.
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**Course Summary**

Students get introduced to English System of tenses so that they can describe people, things, tell past and contemporary events and predict things in future. They also get exposed to the use of Vocabulary and grammatical forms and business English in terms of letter writing.

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**Learning Outcomes:**

After the course, the students should have the following skills:

- Communicating reasonably in English.
  - Describing people and things that are around them such as computers, printers, etc.
  - Writing simple Business letters.
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**Syllabus Outline**

**Auxiliary verbs: Do, Be, and Have**

The spoken English have got/ have

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**Tense:**

Introductory view:

Present simple tense.	}	<b>Form / Usage</b>
Present continuous.		
Present continuous perfect tense.		

**Action and statue verbs:** Active and Passive Voice:

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**Pronunciation:**

**Intonation:** Difference between Wh- and Yes/No questions

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**Numbers:**

Money, fractions, decimals, percentages, phone numbers, dates

**Sports and leisure activities:**

Play tennis, go fishing....

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**Descriptive narrating**

Describing a person.....

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**Past time:**

Past simple, continuous, and perfect.

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**Art, music and literature:**

Verbs and nouns that go with the sports activities.

**Giving Opinions*****Progress Test***

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**Obligation and permission:**

Must, have to, should Can, could~ allowed to  
Requests and offers; Could you ... ? Can you ... ? Shall 1..

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**Adjectives that describe people:**

Punctual, friendly...

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**Future:**

Will, going to, present continuous. **Form / Usage**

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**Analyzing Formal Letters.**

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**Weather terms**

Cloudy, hot, chilly...

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**Sending a fax**

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**Verbs + Infinitive or –ing.**

“Like” as a verb or as a preposition.

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**Relative clause.**

Collocation of Adjectives or Adverbs.

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**Course Weight:**

Course Work : 50%.  
Final Exam : 50%.

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**Course Work:**

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Soars, John and Liz (1998) “New Headway English Course.”

**Indicative References:**

Leech, Geoffrey (1998 ) “ An A to Z of English Grammar”  
Mc-Carthy and O’Dell (1999) “English Vocabulary”  
Thomson and Martinet(1997) “Practical English Grammar”  
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<b>Course Code</b>	: CMSKF 0011
<b>Course Title</b>	: English I B
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course work Preparation</b>	:
<b>Prerequisites</b>	: CMSKF 0010 (English I A)
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: Secondary School

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**Aims:**

- Improving their speaking skill through elaborating on the use of Model Auxiliaries and practicing how to theorize by using IF conditions.
  - Enhancing their reading skill through inductive reasoning.
  - Introducing them to the skill of combining sentences.
  - A sequel for Social English (Functional English).
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**Course Summary:**

Students can improve their skills through elaborating on the use of model auxiliaries and practicing how to theorize by using IF conditions. They can also enhance their reading skills through reasoning and are also introduced to the skill of combining sentences.

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**Learning Outcomes:**

After the course, the students should have the following skills:

- Reading critically.
  - Write short Reports.
  - Using skill of Complex and Combined sentences.
  - Writing good English letters.
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**Syllabus Outline****Explanatory Account:**

**Present Perfect Continuous.**

Active and Passive: Review the system of tense.

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**Multi-word verbs:**

Look after, grew up

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**On the telephone**

**Formal letters:** A letter of application

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**Conditional:** Type 1 conditional  
Type 2 conditional  
Type Zero conditional

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**Time clauses:** when - as soon as

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**Base and strong adjectives:**

Big – enormous.  
Modifying adverbs; very big - absolutely enormous.

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**Making suggestions;**

You ought to ask for a pay rise.

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**Linking devices and comment adverbs.**

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**Modal verbs (2):**

Probability (present and Past)  
can't - could - might – must

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**Character adjectives:**

sociable, easy-going ...

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**Agreeing and disagreeing:**

so do I! Neither am I...

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*Sentence combination:*  
*Describing a person and a place*

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**Progress Test**

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**Present Perfect Continuous:**  
Simple vs. Continuous -Time expressions: since - until - for ...

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**Compound nouns:**

Postcard; Post office.

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**Complaining:**

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**Beginning and ending letters:**

Formal and informal, and Indirect questions.

**Question tags**

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**Verbs and nouns that go together:**

whistle a tune  
drop someone's line  
Producing a class poster

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**Reported speech:**

Reported statements, questions and commands.

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**Pronunciation**

Practice of the phonetic script.

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**Correcting language mistakes** in an informal letter.

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## Assessment

### Course Weight:

Course Work: 50%.  
Final Exam: 50%.

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### Course Work:

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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### Text Book:

Soars, John and Liz (1998) “New Headway English Course.”

### Indicative References:

Leech, Geoffrey (1998 ) “ An A to Z of English Grammar”  
Mc-Carthy and O’Dell (1999) “English Vocabulary”  
Thomson and Martinet(1997) “Practical English Grammar”  
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<b>Course Code</b>	: CMSKF 0001
<b>Course Title</b>	: Microcomputer Operation & Applications
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 14
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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**Aims:**

To train students to be keyboard operators  
To provide an introduction to computing and operating system facilities  
To be able to use word processing efficiently  
To be able to use spread sheet efficiently  
To be able to use database Tables

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**Course Summary:**

The course provides an introductory view of Microcomputer Operations & Applications. Their limiting factors are illustrated through lectures and laboratory sessions focusing on architecture, hardware and software issues.

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**Learning Outcomes:**

**After completing the Keyboarding & Windows 2000 Students should be:**

1. Familiar with different keyboards
2. Proof – read and correct all text produced
3. Understand the computer as a system
4. Differentiate between Hardware and Software
5. Familiar with the responsibilities of different people who use the computers
6. Competent in using the computing facilities , being proficient in the use of basic

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**After completing the word-processing (MS WORD 2000) students should be:**

Able to use word processing package in combination of speed, accuracy and presentation of material which is common to majority of business offices.

*After completing the Spreadsheets (MS EXCEL 2000) Students should be:*

Able to operate spreadsheet on a computer applied to common business applications such as sales records, balance sheets, invoices, charts and other every day stimulation.

**After completing the Database (MS ACCESS 2000) students should be:**

- Able to introduce the concepts of Databases Management Systems.
  - Able to identify applications where the Data Bases could be used.
  - Able to use Record Design, Updating files, screen inquiries, Reports and Label design.
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## **Syllabus Outline:**

### **Windows 2000**

- What is Windows 2000
- Working with Desktop Tools
- Getting Around In Windows 98
- Customizing Windows 98
- Writing with WordPad
- Drawing Pictures with Paint
- Using Windows-Based Programs
- Setting up A Filing Systems
- Managing Files and Disks
- Locating Your Files

### **MS Word Processing 2000**

- Create documents
- Edit Documents
- Page formatting, text formatting, boldface, underline, italic, fonts.....etc
- Proof-read and correct documents. Using searching, spelling facilities.....etc.
- Establish left, right margins, justification, line spacing, and page length.....etc.
- Create tables
- Create file names according to predetermined standard
- Use of command files to call the word-processing facility
- Some advanced word-processing facility

### **Spreadsheets (MS EXCEL 2000)**

- Introduction to electronic spreadsheets
- Moving around the spreadsheet
- Entering and editing cell entries
- Copying cells
- Editing and copying data and formats

- Clearing and deleting cells, rows and columns
- Formatting a worksheet
- Using of functions and mathematical operators
- Using of a worksheet in a numerical analysis, financial and non-financial applications
- Working with charts

**Data Base (MS ACCESS 2000)-Using**

- Introduction to Data Base
- Getting the Best View of Your Data
- Saving time with forms
- Printing Reports and Mailing Labels
- Adding a Table
- Attaching and Importing Data
- Joining Tables to See Related Data
- Relating Tables
- Selecting the Records you want
- Creating User-Friendly Queries
- Using Controls Show Text and Data
- Using Pictures and Other Objects
- Showing Related Records and Calculations on Forms

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**Assessment:****Examination** : 2 hours**Course Work** : Assessment of a set of laboratory Exercises by written work and presentations**Weighting between E and CW: E 0%,100%CW**

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**Course Work:**

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book: Windows 2000, Computer centre****Indicative References:**

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<b>Course Title</b>	: Accounting Principles
<b>Course Code</b>	: CMSKF 0002
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	:
<b>Course Work Preparation</b>	: 22
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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### **Aims:**

Upon completion students should possess basic understanding and practical skills associated with following areas:

1. Accounting Data
  2. Cash Control
  3. Stock
  4. Simple Final Accounts.
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### **Course Summary:**

This Course introduces students to the principles of Accounting, so that the student should be to Understand the terminology and concepts in accounting in order to operate computerized Accounting software in the future, and be able to understand the user requirements when involved in developing tailor made financial applications.

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### **Learning Outcome:**

**After completing the Course students should be able to:**

\* Identify the movement of commercial documents between the parties involved in a credit sale or credit purchase and present this in form of a flowchart.

\*Prepare:

- Invoices to include trade discount and cash discount
- Credit Notes.

- Cheques.
  - \* Post sales invoices and purchase invoices to the appropriate day books, make entries into the sales ledger, purchases ledger and general ledger, total the day books and balance off the ledger accounts.
  - \* Prepare and balance a three column cash discounts allowed and cash discounts received.
  - \* Enter the cash discounts allowed and cash discounts received into the general ledger.
  - \* Prepare, understand and comment on simple bank reconciliation statements.
  - \* Make entries into the petty cash book.
  - \* Understand the impress system and how to restore to impress.
  - \* Value stock using FIFO, LIFO, and ACVO.
  - \* Complete stock ledger cards showing balances existing at the end of each transaction.
  - \* Prepare simple trading accounts illustrating the effect if different stock valuation methods on gross profit.
  - \* Calculate the mark-up.
  - \* Understand and calculate gross profit in the trading account.
  - \* Identify revenue expenses and charge these to the profit and loss account to calculate net profit.
  - \* Distinguish between assets and liabilities and apply the balance sheet equation to calculate capital.
  - \* Prepare very simple balance sheets.
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## **Syllabus Outline:**

- Nature and Purpose of accounting
- Historical Review
- Introduction to double-entry, Book-Keeping
- The Accounting Equation
- Double entry, Double entry system
- Credit transaction
- Ledger Accounting
- Balancing the accounts and extracting the Trail Balance
- Final Accounts

- The Trading Accounting the Profit and Loss Account
  - The banking system
    - \*Cheques
    - \*Paying
    - \*Cheque clearing
  - Two column Cash Books
  - The use of Folio columns
  - End of year adjustments: stock and work in progress
  - Accounting for stock and work in progress
  - Stock valuation
  - Alternative Bases of cost calculation
  - The Analytical Petty Cash Book and impress system
  - Accounting for stock and work in progress
  - Types of Ledger
  - Books for Prime Entry
  - Day books
  - The Journal
  - The Analyzed Cash Book
  - Petty Cash
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**Assessment:****Examination** :2 hours**Course work** :Assessment of a set of laboratory Exercises by written work and presentations**Weighting between E and CW: 50% E, 50% Cw**

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**Course Work:**

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Accounting Principles, Computer Centre internal publication (200)

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**Indicative References:**

The Easy way series, Walance Kravitz.

Accounting Theory and Practice, Glantier. Onderdown.

<b>Course Title</b>	: Introduction to Computer Programming
<b>Course Code</b>	: CMSCD1003
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Lectures-Labs</b>	:24- 30
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	:26
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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**Aims:**

To provide an introduction to computer programming which emphasizes using the computer in methodical and effective manner.

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**Course Summary:**

This Course provides practical instruction in the application of fundamental programming techniques prior knowledge of programming language. Good design practice is emphasized throughout.

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**Learning Outcomes:**

After completing the Course students should be able to:

1. Use the computer facilities, being proficient in their use of basic operating system commands and a screen editor.
  2. Interpret the meta-language that describes a chosen high-level programming language.
  3. Use basic data types and input and output.
  4. Use the basic control structures for selection and iteration.
  5. Implement simple data structures 1 dimensional array.
  6. Interpret pseudo-code and describe its functions.
  7. Implement test and debug straightforward computer programs.
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## Syllabus Outline:

- Programming concepts
- Arithmetic
- Input and iteration control structures
- Selections and iteration control structures
- Functions and sub- programming
- Static data structures using arrays
- Testing and debugging
- Test data production

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### Assessment:

Continual assessment

**Weighting between E and CW: 25%CW, 75%Final Exam**

Relationship between learning outcomes and the assessment tasks:  
All learning outcomes assessed by Course Work.

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### Course Work:

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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### Text Book:

programming in C, Computer Centre internal publication(2000)

### Indicative References:

C programming by Shaum series

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<b>Course Title</b>	: English I I A
<b>Course Code</b>	: CMSKF 0012
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	:
<b>Prerequisites</b>	: CMSKF0011 (English I B)
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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### **Aims:**

- At this level the students begin to perceive the systems that underlie the language, namely the tense system, including active and passive patterns, tense usage in clauses...etc.
  - As the course book combines all four skills (listening, speaking, reading and writing), sessions are devoted to their development systematically by having the students move from skill getting to skill using through related tasks and appropriate activities..
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### **Course Summary:**

At this level the students begin to perceive the systems that underlie the language, namely the tense system, including active and passive patterns, tense usage in classes etc. Also few sessions are devoted to their development systematically by having the Students move from skill getting to skill using through related tasks and appropriate activities.

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### **Learning Outcomes:**

After completing this course, the students should be able to :

- Understand different types of messages linked to every day activities (face to face, telephone, recorded conversation ...).
  - Express themselves verbally and in writing with some kind of fluency so as to be understood clearly and without a risk of false interpretation.
  - Make use of the language features and forms acquired thus far.
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## Syllabus Outline

### **The tense system**

Simple, continuous, perfect – active and passive

### **Compound nouns**

### **Dates & Numbers**

**Pronunciation** vowel sounds and spelling

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**Hot verbs** take & put

### ***Position of adverbs and adverbial phrases***

**Exclamations**, e.g. How amazing! What a brilliant idea!

### ***Note-taking – Writing a biography***

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### ***Narrative tenses***

past simple, past continuous and past perfect

### ***Suffixes & prefixes***

**Talking about books**

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Expressing quantity countable & uncountable nouns

**Words with variable stress** (verbs vs nouns)

**Research and report writing**

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### ***Future forms***

Will, going to, and present continuous

### ***Tense usage in clauses***

**Formal and informal letters:** recognizing formal style

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### **Relative clauses**

defining and non-defining clauses

### **Participles and infinitives**

### **Synonyms in context**

**Describing a place**, e.g. part of town

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### **Assessment**

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### **Course weight**

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Course Work : 50%

Final Exam : 50%

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### Course Work

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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### Text Book:

Soars, John and Liz (1998) "New Headway English Course."

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### Indicative References:

John Eastwood (1994)	" <u>Oxford Practice Grammar</u> "
McCarthy and O'Dell (1999)	" <u>English Vocabulary</u> "
Thomson and Martinet(1997)	" <u>Practical English Grammar</u> "
M.D. Monroe Makenzie (1995)	" <u>Modern English Pronunciation</u> "
	<a href="http://www.englishpractice.com">www.englishpractice.com</a>

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<b>Course Title</b>	: English I I B
<b>Course Code</b>	: CMSKF 0013
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	:
<b>Prerequisites</b>	: CMSKF 0012 English II A
<b>Co – requisites</b>	:
<b>Recommended Prior study</b>	:

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**Aims:**

- Practice of advanced language forms such as various verb patterns, conditionals and their possible variations, modals and their different uses, etc.
  - Emphasize on the acquisition and retention of the more subtle skills that produce fluency.
  - Expand and deepen the students' language acquisition and knowledge.
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**Course Summary:**

The students can learn to practice advanced language forms such as a Verb patterns, conditionals and their possible variations, modals and their different uses. It also emphasizes on the acquisition and retention of the more subtle skills that produce fluency, expand and deepen the student's language acquisition and knowledge.

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**Learning Outcomes:**

After completing the course, the students should be able to:

- Reach a certain level of proficiency when using the language
  - Understand the main points of a talk delivered in standard English
  - Understand various kinds of authentic texts ( narrative, descriptive, argumentative... ), and exploit reference books efficiently ( dictionaries, encyclopedia )
  - Master to some extent some writing skills such as note-taking, summarizing, and composing.
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## Syllabus Outline

**Verb patterns** -ing or the infinitive:

Hot verb **get**

**Contrasting ideas**

writing about an invention

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**Modals** probability and other uses

**Making sentences stronger** adjectives and adverbs

*Talking about the lives of famous people*

Making connections in texts **antonyms & synonyms**

*Questions and negatives*

**Joining sentences** conjunctions and adverbs

**Being polite** polite requests & polite refusals

<p><b>Stop &amp; Check</b> <b>Progress Test</b></p>
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Expressing habit **present and past habits**

**Hot verbs** come and go

*Time expressions*

*Writing about a period in history*

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**Hypothesising about the present and the past**

**Wishes and regrets**

**Idioms**

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Noun phrases

Articles and determiners

Adding emphasis **emphatic structures, word order and the passive**

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**Homonyms and homophones**

**Linking and commenting**

**Describing a career**

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**Assessment:****Course weight**

Course Work : 50 %  
Final Exam : 50 %

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**Course Work**

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Indicative References:**

Soars, John and Liz (1998) "New Headway English Course."

Supplementary :

John Eastwood (1994) "Oxford Practice Grammar"

Mc-Carthy and O'Dell (1999) "English Vocabulary"

Thomson and Martinet(1997) "Practical English Grammar"

M.D. Monroe Makenzie (1995) " Modern English Pronunciation  
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<b>Course Title</b>	: Introduction to Computer Systems
<b>Course Code</b>	: CMSCY 1001
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 100
<b>Course Work Preparation</b>	: 22
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: Micro computer Operation & Applications

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**Aims:**

The aim of the Course is to develop the student's appreciation of computer technology and its applications

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**Course Summary:**

The course provides an introductory view of computer systems. The Course focuses on architecture, hardware and software issues.

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**Learning Outcomes:**

After completing the Course students should be able to:

1. Manipulate the various numbers bases applicable to computing
  2. Understand and the Von Neuman architecture in simple systems
  3. Describe how software is stored and executed in a computer
  4. Have a good understanding of various L/O devices and peripherals available and evaluate their use Relative speed and cost.
  5. Use GUI and command line driven operating systems and evaluate their relative merits
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## Syllabus Outline:

Number bases such as binary, hex and octal and how to convert numbers between bases.

The various levels of abstraction of the Data Hierarchy. I.e from bit level. Though bytes and ASCII, fields and up to databases.

Peripheral devices used for input and output including Source Data Automation technology such as OMR, OCR, MICR etc.

Basic computer architecture and the component parts of computers, i.e. main memory, processor, buses, I/O parts etc. ROM and RAM technologies and their function within a computer.

Software and an overview of various high and low level programming languages. How software is compiled from high level languages to machine code and how the resulting machine code is load. Stored and executed within the computer.

Basic networking including descriptions of the hardware and software involved. The various channel available and basic WAN and LAN topologies.

Basic GUI use and design principles including a basic insight into HCI (Human Computer Interaction).

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## Assessment:

**Examination :2 hours**

**Course Work : Assessment of a set of laboratory exercises by written work and presentation**

**Weighting between E and CW: 75%E, 25%CW**

## Course Work:

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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## Text Book:

Introduction to Computer System, Computer Centre, internal publication.

## Indicative References:

Clements. A., The principles of computer hardware. 2 ed.. Oxford University Press.  
191  
Course Notes.

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<b>Course Title</b>	: Program Design
<b>Course Code</b>	: CMSCD 1005
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 24
<b>Prerequisites</b>	: Introduction to Computer Programming
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	:None

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**Aims:**

To develop program design skills in contrasting design methods.  
To instill an awareness that different problem specifications can require different approaches to design

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**Course Summary:**

This Course introduces the fundamentals of program design. Practical examples and exercises are used to demonstrate contrasting design techniques.

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**Learning Outcomes:**

After completing the Course students should be able to:

1. Apply a methodical approach to the production of high-quality software
  2. Produce design solutions for typical data processing problems and for problems requiring an event-driven/multi-state approach
  3. Design and implement simple user interfaces.
- 

**Syllabus Outline:**

**Design objectives:** reliability, ease of maintenance, robustness and simplicity.

**Structure programming concepts:** sequence, selection and iteration.

The basics of state-transition diagrams for simple problems

User-interface design and implementation

Principles of event-driven design

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**Assessment:**

Continual assessment.

**Weighting between E and CW : 25%CW,75%E.**

Relationship between learning outcomes and the assessment tasks:

Implementation aspects of all learning outcomes assessed by Course Work. Theoretical and design only aspects are assessed by the examination.

**Course Work:**

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Introduction to Program Design, Computer Centre, internal publication.

**Indicative References:**

King .M.J.Pardoe.J.P. .Program design Using JSP: a practical introduction.2<sup>nd</sup> ed..Macmillan. 1992.

Software Development Group: Program Design, Internal publication.

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<b>Course Title</b>	: Reasoning and Communication
<b>Course Code</b>	: CMSGN 1001
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	:
<b>Prerequisites</b>	: GCSE (or equivalent) Mathematics and English
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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**Aims:**

Students enhance their understanding and techniques of learning, observation, reasoning and communication.

---

**Course Summary:**

The Course develops the momentum of the students' learning, observation, reasoning and communication to carry them through their current programmes and into their subsequent careers

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**Learning Outcomes:**

After completing the Course students should be able to:

1. Structure and manage their own learning processes.
  2. Communicate more effectively through an appreciation of learning in the elicitation and presentation stages in the exchange of data, information and knowledge.
  3. Prepare a CV.
  4. Demonstrate basic skills in report presentation in both oral and written modes.
-

## Syllabus Outline:

Application of IT (Microsoft Office) Word. Excel. Access. Power Point. For: Presentations Essay writing and Report writing as well as Preparation of a CV.

Some Presentations form fourth years students and from companies and careers an Introduction to Placements.

N.B.Part timers in relevant job would be encouraged to share their experiences in this section and perhaps lead discussions.

Uses of IT Various Software and user Guides.E.g.DERIVE.Matlab.

Uses of Latest calculators e.g. TI-92

Uses and abuses of Internet and E-mail and of handouts and textbooks.

Uses of Learning Resources

Uses of the Tutorial System and the Personal Tutor System

All of the above ideas will be running throughout this Course within the two contexts of:

**Reasoning: Logic Problems: Mathematical puzzles. Master classes Problem Solving Maths trail and the like**

Communication:- Gathering information and analyzing it and then presenting it in various forms.

### Assessment:

**Examination :2 hours**

**Course Work : 3**

**Weighting between E and CW:       75%CW  
  25%E**

Relationship between learning outcomes and the assessment tasks:

- 1:Process v outcomes, communication skill (LO1,LO4)
- 2:Case study, data analysis, problem solving (LO2,LO4)
- 3:CV preparation (LO3)

### Course Work:

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

**Text Book:**

**Indicative References:**

To be advised.

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<b>Course Title</b>	: Computerized Accounting (Dac Easy)
<b>Course Code</b>	: CMSKF 0004
<b>School Name</b>	: CMS
<b>Level</b>	: Foundation
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 20
<b>Prerequisites</b>	: CMSKF0002 Accounting Principles
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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**Aims:**

To enable students to use commercial computerized accounting packages efficiently.

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**Course Summary:**

The course enables the students to use commercial computerized accounting packages efficiently and maintain accounts of commercial Banks and other organizations.

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**Learning Outcomes:**

After completing the Course students should gain practical experience using one of the famous accounting packages in the following areas.

- Accounting Data
  - Cash control
  - Stock control
  - Simple final account.
- 

**Syllabus Outline:**

- Review of accounting principles
- System preparation
- File setup and Editing
- Company file maintenance
- General ledger
- Receivable
- Payable
- Cash
- Billing
- Purchasing

- Inventory Control
  - Period-end-processing
  - Reports
- 

**Assessment:****Examination : 2 hours****Course Work : assessment of a set of laboratory**

Exercises by written work and presentations

**Weighting between E and CW:0%E, 100%CW.****Course Work:**

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Computerized Accounting, Computer Centre, internal publication

**Indicative References:**

- Accounting Principles, Computer Centre. Internal Publishing (2000).
  - DacEasy Accounting Package, Bud E. Smith.
- 
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<b>Course Title</b>	<b>: Computer Programming &amp; Problem solving</b>
<b>Course Code</b>	<b>: CMSCD 1004</b>
<b>School Name</b>	<b>: CMS</b>
<b>Level</b>	<b>: Diploma</b>
<b>Credits</b>	<b>: 3</b>
<b>Total Learning Hours</b>	<b>: 90</b>
<b>Course Work Preparation</b>	<b>:24</b>
<b>Prerequisites</b>	<b>: None</b>
<b>Co – requisites</b>	<b>: None</b>
<b>Recommended Prior study</b>	<b>: None</b>

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### **Aims:**

To develop skills in:

1. The use of basic data structures provided by a programming language
  2. The use of programming techniques in problem solving
  3. Modular programming in a programming team environment
  4. Rudimentary Program design
- 

### **Course Summary:**

This Course builds on the practical application of programming techniques by providing instruction and practice in the use of dynamic data structures. It further develops programming skills by presenting a methodical approach to the solving of common programming problems. Much of the work will be carried out in a term-based modular programming environment.

---

### **Learning Outcomes:**

After completing the Course students should be able to:

- 1) Use record structures and files
- 2) Use modular programming techniques
- 3) Use simple dynamic data structures (queues, Stacks, linked lists).

***Apply a methodical approach to problem solving from analysis of requirements through design into coding , testing, debugging and documentation***

- 4) Accomplish programming tasks as an involved member of a programming team.
-

## Syllabus Outline:

- The use of pseudo-code using the control structures of a programming language design by pseudo-code
- More static data structure using files and record structures
- Functions and separately-compiled sub-program
- User –defined data types;
- Problem solving and algorithms;
- Dynamic data structure: queues, stacks and linked lists:
- Documentation: user and program;
- Testing and debugging

---

## Assessment:

Weighting between E and CW : 100% CW, 0% E .

## Course Work Details:

Some smaller exercises for the early material followed by some larger team-based projects.

Relationship between Learning Objectives and Assessment Tasks:  
All outcomes assessed by Course Work.

## Course Work:

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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## Text Book:

Computer Programming & Problem solving, computer Centre, internal publication.

## Indicative References:

King, M.J.,Pardoe J.P.,Vickers P..A first course in computer programming using C, MxGraw-Hill, 1995.

Software Development Group. Computer Programming and Problem Solving . Internal Publication .

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<b>Course Title</b>	: Abstraction and Modelling
<b>Course Code</b>	: CMSMA 1004
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 16
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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### **Aims:**

This Course aims to enable the student to develop an understanding of the fundamental concepts needed to build and use formal models of system in computing.

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### **Course Summary:**

The Course introduces the fundamental concepts needed to build and use formal models of systems in computing.

---

### **Learning Outcomes:**

After completing the Course students should be able to :

1. Understand and apply the basic properties of sets and logic
  2. Use the notations of set theory and logic to describe data and constraints
  3. Understand and apply the use of algebra and deduction rules in simplifications and proofs
  4. Understand and apply the concepts of functions and relations
- 

### **Syllabus Outline:**

**Theory:** notation, set operations, set algebra. Cartesian products, power sets. Use in modeling data types. In positional calculus: notation .Connectives. Truth tables. Equivalences. Implications. Deduction rules. Simple proofs, Boolean algebra. Simplifying expressions.

**Predicate calculus:** free and bound variable . Quantification. Simple proofs .Use in writing conditions on data.

**Relations and functions:** classes of relation (e.g. injections, surjections. bijections, invertible. Composite).Use in specifying and describing systems.

---

**Assessment :**

**Examination : 2 hours**

**Weighting between E and CW: 25%E, 75% CW**

**Course Work:**

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Abstraction & Modelling, Computer Centre, internal publication.

**Indicative References:**

J.C. and Buckley, F .(1986) A First Course in Discrete Mathematics . Wadsworth International.

Skvarcius , R. and Robinson. W.B.(1980) Discrete Mathematics with Computer Science Applications

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<b>Course Title</b>	: Introduction to RDBMS
<b>Course Code</b>	: CMSKD 1001
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 20
<b>Prerequisites</b>	: Intro to Computer Programming, Program Design
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

---

**Aims:**

1. To Provide a general overview of the nature and purpose of database systems
  2. To introduce the concept of the relational model of the database systems
  3. To provide an introduction to Event-driven Programming using Access Basic
  4. To give a good background for other courses at higher levels
- 

**Course Summary:**

The Course aims at introducing the participant fourth generation language programming, no previous programming experience is assumed. The course enables the participant to develop application programs tailored to the user needs.

---

**Learning Outcomes:**

After completing the Course students should be able to:

1. Understand the difference between structured Programming & Event Driven Programming
2. Understand the Relational Database Design
3. Appreciate the cost and benefits of interdicting a relational database management system
4. Design a relational database system
5. Create tables with relationships
6. Design input screens
7. Design reports and output screens
8. Inquiry and search for data using queries and forms
9. Deal with procedures and functions in Access Basic , and to compile the Courses
10. Integrate the objects of the system to develop an application.

## Syllabus Outline:

### Introduction to Database Design Process

- Design a database fundamentals
- Relational Database Design (Case Study involving DFD's Normalization, ERD's)

### Introduction to database Objects

- Create tables
- Queries
- Forms
- Report design
- Macros

### Access Programming

- Course types-Global & private
- Concepts of Functions & Procedures
- Event Programming
- Compiling Programs
- Integrity of Input
- Controlling Input

### Designing an application

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### Assessment:

#### Examination (2 hours)

Weighting between E and CW: 25% E, 75% CW

#### Course Work:

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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### Text Book:

Introduction to RDBMS, Computer Centre, internal publication.

### Indicative References:

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<b>Course Title</b>	: Software Development Process
<b>Course Code</b>	: CMSCD 1001
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	:24
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

---

**Aims:**

1. To introduce the concept of the software development life cycle
  2. To develop basic skills in some analysis, design and evaluation techniques that support the life cycle stage.
- 

**Course Summary:**

The Course provides and introduction to software development and effects of using various analysis  
Design and management techniques throughout the development process.

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**Learning Outcomes:**

After completing the Course students should be able to :

1. Understand the stages in the production of software.
  2. Apply fundamental fact finding, fact recording and analysis tools and techniques include those applicable to structured methods simple selected situations.
  3. Conduct a simple detailed investigation and relate it to an analysis of requirements
  4. Apply fundamental design methods techniques and tools to a simple computer based system.
-

**Syllabus Outline:**

- Overview of a basic software development life cycle
  - Introduction to fact finding techniques
  - Introduction to requirements analysis
  - Introduction to design techniques .e.g. prototyping . User interface design
  - The role of testing reviews and walkthroughs
  - The techniques of system implementation
  - The project management process including project planning and quality assurance
  - Overview of the role of maintenance.
- 

**Assessment :**

**Examination : 2 hours**

**Course Work : One substantial Course Work**

**Weighting between E and CW : 75% EX, 25% CW**

**Course Work:**

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Software Development, Computer Centre, internal publication.

**Indicative References:**

Britton .C.Doake . J..Software systems development :a gentle introduction . 2<sup>nd</sup> ed..McGraw-Hill.1996

Senn.J.A.. Analysis and design of information systems. 2<sup>nd</sup> ed..McGraw-Hill. 1989

Sommerville I.. Software engineering 5<sup>th</sup> ed..Addision-Wesley.1995

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<b>Course Title</b>	: Computer Architecture
<b>Course Code</b>	: CMSCY 1002
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 24
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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### **Aims:**

The aim of the Course is to enable students to gain a detailed view of computer architecture at the hardware and software levels.

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### **Course Summary:**

This Course covers a detailed hardware, software and systems study of representative modern computer systems.

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### **Learning Outcomes:**

After completing the Course students should be able to:

1. Understand the operation of logic gates and analyse their use in synchronous and a synchronous circuits.
  2. Understand the operation of various memory devices and design simple circuits
  3. Write simple assembly language programs which access system services and interface them with a high level languages such as C .
  4. Describe the operation of current hard drive mechanisms and their standards and investigate their formats.
  5. Describe the architecture of modern processors and memory and expansion bus architectures.
  6. Give a detailed view of networks including topologies. Communication channels. Communication protocols and communication signals
-

## Syllabus Outline:

- The 8086 processor and memory architecture and the development of the PC compatible computer.
  - 8086 assembly language and interfacing with the PC's BIOS. Operating system and high level languages.
  - Logic circuits. Both synchronous and asynchronous including encoders. Decoders and adders.
  - A detailed view of memory devices such as ROM. DRAM. RISC and CISC microprocessor technology.
  - Pipelining and other methods of increasing instruction throughput. Instruction and data caching and cache architectures.
  - Expansion bus architectures such as ISA, EISA, VL and PCI.
  - Hard drive standards such as IDE, MFM, RLL. And SCSI.
  - Fundamentals of data communications and networking: Protocols, architectures and models.
- 

## Assessment :

**Examination: 2 hours**

**Course Work: A single assembler language**

Programming Course Work

**Weighting between E and CW: 25% E, 75% CW**

## Course Work:

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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## Text Book:

Computer Architecture, Computer Centre, internal publication

## Indicative References:

Clements. A.. The principles of computer hardware ,2<sup>nd</sup> ed..Oxford University Press. 1991

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<b>Course Title</b>	: Information Systems in Business
<b>Course Code</b>	: CMSCB 1001
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 20
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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### **Aims:**

To introduce the use and provision of information using computer technology to help carry out business tasks and functions.

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### **Course Summary**

The Course provides an overview of the business environment. The role of information technology in assisting business enterprise.

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### **Learning Outcomes:**

After completing the Course students should be able to

1. Discuss and describe business organization structure
  2. Discuss and describe the role of IT in a business organization
  3. Develop and present a outline business plan for a small business using appropriate software.
- 

### **Syllabus Outline:**

- Introduction to small and large business e.g. flat organizations and organizational structures and hierarchical.
- The use of information system (IS) within business and the areas they support.
- Types of IS e.g. large bespoke systems packages and how they support large and small businesses.
- The role of IT in the small business environment and other interested parties e.g. BACS, NI, Tax etc.

- Standards and documentation-optional and mandatory.

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**Assessment:****Examination : 2 hours****Course Work : One substantial Course Work****Weighting between E and CW : 50% E, 50%CW****Course Work:**

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Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

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**Text Book:**

Information Systems in Business, Computer Centre, internal publication

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**Indicative References:**

Moynihan, E , Business management and systems analysis . Alfred Waller, 1993.  
Mandell .S.L. Computers and information processing. Concepts and applications. 6<sup>th</sup>  
ed.West Publ Co..1992.  
Avison.D.E..Mastering business microcomputing. Macmillan. 1990

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<b>Course Title</b>	: Local Area Network
<b>Course Code</b>	: CMSKD 1002
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 20
<b>Prerequisites</b>	: None
<b>Co – requisites</b>	: None
<b>Recommended Prior study</b>	: None

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**Aims:**

To provide an introduction to Data Communication in general and Local Area Networks in Particular with practice on one of the LAN operating system emphasizing on configuration and management of file server, Print Server and Workstations along with managing of System Security.

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**Course Summary:**

The course aims at providing the students an idea about the networking and its fundamentals. The course emphasizes on configuration and management of file server, print server and workstations along with managing of system security.

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**Learning Outcomes:**

After completing the Course students should be able to:

1. Be aware of Data Communication concepts, different types of networks , and components of a LAN.
  2. Be able to configure a LAN network, manage a LAN network operating system, and to configure a LAN network resource (Workstations and Printers).
  3. To run a shared application LAN.
-

## Syllabus Outline:

- The Uses of Data Communications.
- Relationship between Computer Systems and Data Communication .
- The basic building blocks of Data Communication networks.
- Types of telephone line and network configurations , MODEMS and Multiplexers
- Asynchronous and Batch processing terminals.
- Microcomputers and Data Communications.
- Data Communication Protocols.
- LAN strategies (based band bus LAN)
- LAN components (File servers, Print servers, Workstations .Cabling ,NIC)
- LAN topologies, Bridges and routers
- LAN operating system :
- Novell NetWare 3. 11 operating system introduction.
  - Directory structure and essential directories
  - Drive pointers and search drives
  - Security structure
  - File and directory attributes
  - User, groups trustee rights and effective rights
  - Configuring a workstation (WSGEN)
  - LOGIN procedures
  - Using network commands
  - Managing file system using FILER
  - Managing drive pointer and sending messages etc. using SESSION
  - Managing users, groups, writing LOGIN scripts, assigning security rights and managing the LAN using SYSCON
  - Supervisory and Console commands
  - Understanding network printing and setting up print server, printing queues. Remote and network printers and printing on the network.

## Assessment:

**Examination: 2 hours**

**Course Work: Assessment of a set of laboratory**

Exercises by written work and presentations

**Weighting between E and CW:25%E,75%CW**

### Course Work:

Quizzes	20%.
Mid Semester Exam	30%
In class Assignments	15%.
Open Assignments	15%
Presentations	10%
Contribution in class	10%

**Text Book:**

Local Area Network, Computer Centre, internal publication

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**Indicative References:**

Data Communications concepts and solutions by Martin R. Arick ,QEDINC.

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<b>Course Title</b>	: Programming Project Part- I
<b>Course Code</b>	: CMSKD 1004
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 20
<b>Prerequisites</b>	: Preceded or accompanied by Introduction to Computer Programming Program Design
<b>Co – requisites</b>	: Visual Basic Programming
<b>Recommended Prior study</b>	: Any Programming language

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**Aims:**

To use structured analysis, structured design and software engineering techniques to solve business related problems.

---

**Course Summary:**

This Course covers the system analysis and design part of the application development life cycle. The student is expected to demonstrate practical knowledge of SSADM at beginners level

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**Learning Outcomes:**

1. Demonstrate the ability to use structured analysis and Design techniques.
  2. Introduce Software Engineering Principles such as divide and conquer, modular design .Information hiding, cohesion, coupling.....etc.
  3. Demonstrate an ability to apply development techniques and methods to the solving of business related problem.
-

## Syllabus Outline:

### Phase One ( 18 hours: 6L, 12course work).

#### Problem Definition and Analysis

In this phase the student must be able to define the problem, set its boundaries. Scope and define the objectives. The system should be analyzed using structured techniques.

#### Deliverables:

- Organization structure of the company for which the student's system is going to be designed.
- Statement of scope and objectives.
- Logical model diagrams (dataflow diagrams DFD's).

### Phase Two (28 hours, 8L, 20W/P)

#### Design

In this part the students should be able to define the various functions in the system. Cohesion and Modularity should be enforced.

#### Deliverables:

- Hierarchical Chart
- IPO charts
- Data dictionary
- Decision tables, decision trees
- System flowchart, clerical procedure flowchart, run chart.
- Screen and Printer layouts
- System specification

### Phase three ( 8 hours, 4L , 4 P/W)

#### Implementation plan

The project network should be used. The network should illustrate the order in which all project activities must occur. This part is carries out with the co-operation of the project supervisor

#### Deliverables:

- The project network
- 

## Assessment:

Both parts I & II will be assessed by a 30 minutes interview. During the interview the student will be asked to give a presentation about his / her project using the whiteboard, then the student should demonstrate his project on the computer to the assessment committee, after the members of the committee ask the student to make modification to

his / her program to make sure that the student did the work himself / herself . the committee will comprise of the Technical Director, the course manager, and the project supervisor. Each member of the committee will be his mark on a separate assessment table. More weight will be given to the mark awarded by the project supervisor.

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### **Indicative References:**

- Introducing Systems Analysis and Design-NCC Publications
  - Structured Systems Analysis and Design : Tools and Techniques :  
GANE & SARSON
  - Programming Project Handout, Internal Publications, Computer  
Centre (2000).
- 
-

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<b>Course Title</b>	: Programming Project Part-11
<b>Course Code</b>	: CMSCD 1005
<b>School Name</b>	: CMS
<b>Level</b>	: Diploma
<b>Credits</b>	: 3
<b>Total Learning Hours</b>	: 90
<b>Course Work Preparation</b>	: 30
<b>Prerequisites</b>	: Programming Project Part-1
<b>Co – requisites</b>	: Visual Basic Programming
<b>Recommended Prior study</b>	: Any Programming Language

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**Aims:**

To be able to implement the design produced in development and testing techniques.

---

**Course Summary:**

This Course covers the coding, Testing and implementation part of the application development life cycle. The student is expected to demonstrate a practical knowledge of (object oriented) structured programming skills.

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**Learning Outcomes:**

After completing this Course the student should be able to:

1. Produce a suite of programs which encompass the facets of business computing
2. Use structured programming techniques
3. Demonstrate an in-depth knowledge of a formal coding language.(3<sup>rd</sup> generation languages such as COBOL,FORTRAN,PASCAL recommended) Dbase III + may be used but 4GL techniques are not recommended
4. Produce relevant documentation in support of the developed programs.

**Development**

The following table provides a guideline for distribution of hours to tasks.

- Coding	40 hours
- Testing	40 hours
- Implementation	10 hours
- System documentation	15 hours
- User documentation	15 hours
- Project report	10 hours

-----  
130 hours

## Syllabus Outline:

### Phase One (80 hours)

#### ● Coding and Testing (modular and structured approaches)

- The student should follow both the network and the hierarchical chart to code and test the different Courses.

#### ● Deliverables:

- Algorithms
- The program flowchart should be coded and checked before any coded and tested separately. Other Courses can be built as STUBs. Coding and testing should follow the top-down approach of system development and testing.
- Security through passwords, backups ...etc. should be considered and implemented

### Phase Two (10 hours)

#### ● Implementation

- The system is actually implemented with real data. Results may be compared with the results produced by the manual systems. Operating procedures must be established. The system test should be conducted.

#### ● Deliverables:

- System test plan
- System test data
- Results of testing

### Phase Three (40 hours)

#### ● Documentation and the project report

The documentation is a continuous process from the definition phase to the implementation phase. During this phase the student should complete the documentation.

#### ● Deliverables:

- System documentation
  - User documentation
  - Project report
- 

## Assessment:

Both parts I & II will be assessed by a 30 minutes interview. During the interview the student will be asked to give a presentation about his / her project using the whiteboard, then the student should demonstrate his project on the computer to the assessment committee, after the members of the committee ask the student to make modifications to his/her program to make sure that the student did the work himself / herself. The committee will comprise of the Technical Director, the course manager, and the project supervisor. Each member of the committee will be his mark on a separate assessment table; more weight will be given to the mark awarded by the project supervisor.

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### **Indicative References:**

- Introducing Systems Analysis and Design –NCC Publications
- Structured Systems Analysis and Design: GANE & SARSON
- Programming Project Handout, Internal Publications Computer Center(2000).

Notes: If part I is completed but part II is not complete, then the student will get an incomplete (no grade until Part II is completed).

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