

Tutorial Letter 101/0/2016 Information Systems IV

INY401I

Year Module

Department of Mechanical and Industrial Engineering

This tutorial letter contains important information about your module.

BAR CODE

CONTENTS

1	INTRODUCTION AND WELCOME	3
2	PURPOSE OF AND OUTCOMES FOR THE MODULE.....	4
2.1	Purpose	4
2.2	Outcomes	4
3	LECTURER AND CONTACT DETAILS	4
3.1	Lecturers.....	4
3.2	Department.....	5
3.3	University	5
4	MODULE RELATED RESOURCES	5
4.1	Prescribed books	6
4.2	Recommended books	6
4.3	Electronic Reserves (e-Reserves).....	6
5	STUDENT SUPPORT SERVICES FOR THE MODULE	6
6	MODULE SPECIFIC STUDY PLAN	7
7	MODULE PRACTICAL WORK AND WORK INTEGRATED LEARNING.....	8
8	ASSESSMENT	8
8.1	Assessment plan	8
8.2	General assignment numbers	8
8.2.1	Unique assignment numbers	8
8.2.2	Due dates of assignments.....	9
8.3	Submission of assignments	9
8.4	Assignments	11
9	OTHER ASSESSMENT METHODS	16
10	EXAMINATIONS	16
11	FREQUENTLY ASKED QUESTIONS	16
12	SOURCES CONSULTED	16
13	CONCLUSION.....	16
14	ADDENDUM.....	16

Please note / important notes: Under no circumstances should the lecturer be contacted with regard to examination dates, results or receipt of assignment or assignment marks or any other general administrative matters.

1 INTRODUCTION AND WELCOME

Dear Student

I am pleased to welcome you to this module (INY401I – Information Systems IV) and hope that you will find it both interesting and rewarding. You will be well on your way to success if you start studying early in the semester/ year and resolve to attempt both the tutorial questions as well as assignment(s) properly. The assignment(s) will be graded and will constitute a certain percentage towards the final module grade.

You will receive a number of tutorial letters during the year. A tutorial letter is our way of communicating with you about teaching, learning and assessment.

Tutorial Letter 101 contains important information about the scheme of work, resources and assignments for this module. We urge you to read it carefully and to keep it at hand when working through the study material, preparing the assignment(s), preparing for the examination and addressing questions to your lecturers.

Study Tutorial Letter 101 as it gives you an idea of generally important information when studying at a distance and within a particular College.

In Tutorial Letter 101, you will find the tutorial questions, assignments and assessment criteria as well as instructions on the preparation and submission of the assignments. It will also provide all the information you need with regard to the prescribed study material and other resources and how to obtain it. **Please study this information carefully and make sure that you obtain the prescribed material as soon as possible.**

General and administrative information about this module can also be found in this tutorial letter. **Please study this section of the tutorial letter carefully.**

I would like to point out that **you must read all the tutorial letters** you receive during the semester **immediately and carefully**, as they always contain important and, sometimes, urgent information.

Some of this tutorial matter may not be available when you register. Tutorial matter that is not available when you register will be posted to you as soon as possible, but is also available on *MyUnisa*.

I hope that you will enjoy this module and wish you all the best!

2 PURPOSE OF AND OUTCOMES FOR THE MODULE

2.1 Purpose

Information Systems IV is an essential part of industrial engineering and is essential for you, who will be pursuing a career in engineering after graduation. The purpose of this Module is to equip students with knowledge of what an analyst does and how emerging information systems fit into organisations. It will help the student use his engineering knowledge and skills to design an information system in a systematic and structured manner. It emphasizes the use of systematic and structured methodologies during each step of the Systems Development Life Cycle (SDLC). During the course of this module students will discover the details of the analysis process including the analysis of data flows and making structured and semi-structured decisions. Students will become familiar with the designing and implementation of accurate data entry procedures, and well-structured input forms and screens. To design an information system requires a searching and inquisitive mind but most of all it requires integrity and objectivity.

2.2 Outcomes

INY401I seeks to achieve the following purpose and outcomes:

1. The skills to apply the techniques of information systems in many types of organizational decision-making situations.
2. Systems analysis and design is a systematic approach to identifying problems, opportunities, and objectives; analyzing the information flows in organizations; and designing computerized information systems to solve a problem.

3 LECTURER AND CONTACT DETAILS

3.1 Lecturers

Your lecturer is: **Dr KR Ramdass**
Tel number : 011 471 2117
Fax number: 011 471 2142
e-mail : ramdakr@unisa.ac.za

Availability: Mondays to Fridays from **08h00 to 15h00**. Any emails received after this time will be attended to on the next working day. Please adhere to these hours.

Role of the Lecturer:

- Provide technical expertise
- Teaching and learning
- Set assignments
- Set examination papers
- Mark examination papers

Under no circumstances should the lecturer be contacted with regard to examination dates, results or receipt of assignment or assignment marks or any other general administrative matters.

3.2 Department

You may contact the Department of Mechanical and Industrial Engineering by post, e-mail, telephone, or online through *MyUnisa*.

Please refer to the booklet: *my Studies @ Unisa* that you received with your study material.

Departmental Address:

Department of Mechanical and Industrial Engineering
Unisa (Florida Campus)
Private Bag X6
Florida
1710

Phone: 011 471 2963

Use the general E-mail address: nkambule@unisa.ac.za

Find our department on the Internet at the online address: <http://www.unisa.ac.za>

Always state your **STUDENT NUMBER** and your Module Code **INY4011** in all correspondence and enquiries to ensure prompt and efficient response from us.

Whenever you contact the Department of Mechanical and Industrial Engineering, ensure that the first thing you mention after greeting is your subject code!

3.3 University

You may contact your lecturers by post, email, telephone or on *MyUnisa*

Physical address: University of South Africa
C/O Christiaan de Wet and Pioneer Avenues
Florida
Roodepoort
City of Johannesburg

Postal Address: University of South Africa
Private Bag X6
Florida
1710

Fax Number: 012 429 4150 / +27 12 429 4150

Email: study-info@unisa.ac.za

Online address: <http://my.unisa.ac.za>

Always use your student number when you contact the university.

4 MODULE RELATED RESOURCES

4.1 Prescribed books

Title: Systems Analysis & Design
Author: Kendall, KE and Kendall, JE
Edition: 9th (Global Edition)
Publisher: Pearson
ISBN: 978-0-273-78710-5

4.2 Recommended books

Title: Systems Analysis & Design for the Global Enterprise
Edition: Seventh Edition
Author: Bentley, LD & Whitten, JL
Publisher: McGraw-Hill International
ISBN: 978-0-07-110766-2

4.3 Electronic Reserves (e-Reserves)

Nil

5 STUDENT SUPPORT SERVICES FOR THE MODULE

For information on the various student support systems and services available at Unisa (e.g. student counselling, tutorial classes, language support), please consult the publication *my Studies @ Unisa* that you received with your study material.

Contact with fellow students

Study Groups

It is advisable to have contact with fellow students. One way to do this is to form study groups. The addresses of students in your area may be obtained from the following department:

Directorate: Student Administration and Registration
PO Box 392
UNISA
0003

MyUnisa

If you have access to a computer that is linked to the internet, you can quickly access resources and information at the University. The *MyUnisa* learning management system is Unisa's online campus that will help you to communicate with your lecturers, with other students and with the administrative departments of Unisa – all through the computer and the internet.

To go to the *MyUnisa* website, start at the main Unisa website, <http://www.unisa.ac.za>, and then click on the "Login to *MyUnisa*" link on the right-hand side of the screen. This should take you to the *MyUnisa* website. You can also go there directly by typing in <http://my.unisa.ac.za>.

Please consult the publication *my Studies @ Unisa* which you received with your study material for more information on *MyUnisa*.

In line with Open Distance Learning (ODL) principles, Unisa has established relations with Multipurpose Community Centres across the country in areas identified as remote. Registered Unisa students across South Africa's rural areas and townships can access free internet for academic purpose (Access to MyUnisa, E-mails, Digital Library, Internet Research and other Computer Based Training modules) courtesy of Unisa. A list of these

Multipurpose Community Centres can be found at the end of this document (the list is accurate at the time of production of this document) or at the following web address:
[http://www.unisa.ac.za/contents/facilities/docs/TELECENTRES-WEB%20\(3\).pdf](http://www.unisa.ac.za/contents/facilities/docs/TELECENTRES-WEB%20(3).pdf)

Please make full use of these centres.

Discussion Classes

Discussion classes may be scheduled at the request of students, or at the discretion of the lecturer. If you wish to have initiate a discussion class, please gather at least 5 students and propose to your lecturer.

Tutorials

There will not be prescribed tutorials but the assignment questions as well as problems in the prescribed textbook and recommended reading can be used as tutorials. It is imperative that you go through the factual review questions, critical thinking activity, discussion assignment 1 and 2 in each chapter in understanding the applicability of information systems.

Videoconferencing

Videoconferencing may be scheduled at the request of students, or at the discretion of the lecturer. If you wish to have videoconference sessions please propose to the lecturer and readily available tools from the internet will be used for these.

Important information appears in your my Studies @ Unisa brochure.

6 MODULE SPECIFIC STUDY PLAN

The module can largely be broken up into chapters with few subsections and can be studied in a modular approach. The following lists the chapters:

- Chapter 1 Systems, Roles, and Development Methodologies
- Chapter 2 Understanding and Modeling Organizational Systems
- Chapter 3 Project Management
- Chapter 4 Information Gathering: Interactive Methods
- Chapter 5 Information Gathering: Unobtrusive Methods
- Chapter 6 Agile Modeling and Prototyping
- Chapter 7 Using Data Flow Diagrams
- Chapter 8 Analysing Systems Using Data Dictionaries
- Chapter 9 Process Specifications and Structured Decisions
- Chapter 10 Object-Oriented Systems Analysis and Design Using UML
- Chapter 11 Designing Effective Output
- Chapter 12 Designing Effective Input
- Chapter 13 Designing Databases

Chapter 14 Human–Computer Interaction

Chapter 15 Designing Accurate Data Entry Procedures

Chapter 16 Quality Assurance and Implementation

Consistent work is important to the successful study of this module (and all other modules at UNISA). Queries from earlier chapters must be clarified as soon as possible instead of “leaving it to the end”. As concepts often cut across subsections, these queries can accumulate into a large problem if unattended to.

In addition to the prescribed and recommended textbooks, you should look for additional textbooks. However as some textbooks may contain outdated information or concepts, it's better to search for one in which the latest edition was published not more than 5 years ago.

Use your my Studies @ Unisa brochure for general time management and planning skills.

7 MODULE PRACTICAL WORK AND WORK INTEGRATED LEARNING

There is no practical for this module.

8 ASSESSMENT

8.1 Assessment plan

The overall assessment consists of three parts, assignments, practical and examination.

The mark for INFORMATION SYSTEMS IV (INY401I) is calculated as follows:

- **The year mark contributes 20% of the final mark**
- **The examination mark contributes 80% of the final mark**

The year mark is based on all the assignment marks obtained and their contribution towards the final year mark are as shown in the table below:

ASSIGNMENT NUMBER	CONTRIBUTION TOWARDS YEAR MARK	CONTRIBUTION TOWARDS FINAL SUBJECT MARK
1 (Compulsory)	50 %	10%
2 (Compulsory)	50%	10%
TOTAL	100 %	20%

8.2 General assignment numbers

Assignments are numbered consecutively per module, starting from 01

8.2.1 Unique assignment numbers

UNIQUE ASSIGNMENT NUMBERS	
Assignment 1	850452
Assignment 2	719630

8.2.2 Due dates of assignments

The due dates for the submission of the assignments are:

THE FINAL SUBMISSION DATES FOR ASSIGNMENTS ARE :	
Assignment 1	27 May 2016
Assignment 2	26 August 2016
<p>Note: The cut-off dates given here are the <u>official, last dates</u> on which a given assignment may be submitted. Students must adhere to these dates only. All other dates referring to cut-off submission dates for assignments, as may be posted on MyUnisa or elsewhere, refers to administrative dates as managed by the Assignment Department and does NOT influence or change the above dates.</p>	

8.3 Submission of assignments

Assignments are seen as part of the learning material for this module. As you do the assignments, study the reading texts, consult other resources, discuss the work with fellow students or tutors or do research, you are actively engaged in learning. Looking at the assessment criteria given for each assignment will help you to understand what is required of you more clearly. In some cases, additional assessment might be available on the *MyUnisa* site for your module. For students attending tutorial sessions, tutors may also set additional tasks and give feedback in class.

Failure to submit assignments on time **may render you ineligible to sit for the exams** at the end of the module.

PLEASE NOTE: Enquiries about assignments, (e.g., whether or not the University has received your assignment or the date on which an assignment was returned to you). You might also find information on *MyUnisa*. To go to the *MyUnisa* website, start at the main Unisa website, <http://www.unisa.ac.za>, and then click on the 'login to *MyUnisa*' link under the *MyUnisa* heading on the screen. . This should take you to the *MyUnisa* website. You can also go there directly by typing in <http://my.unisa.ac.za>.

Please note: Although students may work together when preparing assignments, each student must write and submit his or her own individual assignment. In other words, you must submit your own ideas in your own words, sometimes interspersing relevant short quotations that are properly referenced. It is unacceptable for students to submit identical assignments on the basis that they worked together. That is copying (a form of plagiarism) and none of these assignments will be marked. Furthermore, you may be penalised or subjected to disciplinary proceedings by the University.

You will **find your assignment** for this subject **AT THE END OF THIS SECTION**. The assignment and practical are compulsory. Please submit the assignment and practical, duly completed, to UNISA before the closing dates stated in this section.

Assignments should be addressed to:

The Registrar
PO Box 392
UNISA
0003

You may submit written assignments and assignments done on mark-reading sheets either by post or electronically via *MyUnisa*. Assignments may **not** be submitted by fax or e-mail unless in special circumstances and this must be discussed with the lecturer prior to the submission. For detailed information and requirements as far as assignments are concerned, see the brochure *my Studies @ Unisa* that you received with your study material.

To submit an assignment **via MyUnisa**:

- Go to *MyUnisa*.
- Log in with your student number and password.
- Select the module.
- Click on assignments in the left-hand menu.
- Click on the assignment number you want to submit.

Follow the instructions on the screen.

You will receive the correct answers automatically for multiple-choice questions. For written assignments, markers will comment constructively on your work. However, comprehensive memorandums on compulsory assignments **will be sent to all students registered for this module** in *MyUnisa*.

As soon as you have received the memorandums, please check your answers. The assignments and the memorandums on these assignments constitute an important part of your learning and should help you to be better prepared for the next assignment and the examination.

VERY IMPORTANT POINTS TO CONSIDER :

- **IT IS COMPULSORY TO SUBMIT ASSIGNMENT 1 and 2**
- **NO LATE ASSIGNMENT SUBMISSIONS WILL BE ACCEPTED**
- **KEEP A CLEAR COPY OF ALL THE ASSIGNMENTS FOR YOUR OWN REFERENCE. THIS IS IMPORTANT, AS ASSIGNMENTS DO GET LOST SOMETIMES**
- **SUBMISSIONS OF ALL ASSIGNMENTS MUST BE IN ACCORDANCE TO THE BOOKLET: myStudies@Unisa**
- The booklet: *my Studies @ Unisa* explains how you may submit assignments electronically. **Note: if you choose to submit your assignments electronically, make sure that you have fixed your Excel or Word files in such a way that it will print on one page wide and not spill over on to a second page. The assignment section just prints the file, they do not check to see whether parts of a page are cut off.**

8.4 Assignments

ASSIGNMENT ONE (Unique Number 850452) DUE DATE 27 MAY 2016

Question 1

- 1.1 Appraise the roles of a systems analyst. (3)
- 1.2 Defend the personal qualities that are helpful to the systems analyst? (5)
- 1.3 Argue the seven phases of the systems development life cycle (SDLC). (14)
- 1.4 Evaluate the use of CASE tools? (3)
- [25]

Question 2

2.1 Neil is a decision maker for Pepe's Atlantic Sausage Company. Because there are several suppliers of ingredients and their prices fluctuate, he has come up with several different formulations for the various sausages that he makes, depending on the availability of particular ingredients from particular suppliers. He then orders ingredients accordingly twice a week. Even though he cannot predict when ingredients will become available at a particular price, his ordering of supplies can be considered routine.

a) On what level of management is Neil working? Explain in a paragraph. (5)

b) What attributes of his job would have to change before you would categorize him as working on a different level of management? Argue them. (7)

2.2 Alice in the human resources department at the Cho Manufacturing plant is constantly being asked by employees how much is taken out of their paycheques for insurance, taxes, medical, mandatory retirement, and voluntary retirement. "It takes up to a few hours every day," says Alice.

She would like a Web system that would allow employees to use a secure logon to view the information. Alice wants the system to interface with health and dental insurance companies to obtain the amount remaining in the employee's account for the year. She would also like to obtain retirement amounts saved along with investment results. Alice has a high regard for privacy and wants the system to have employees register and give permission to obtain financial amounts from the dental insurance and retirement companies.

a. Write up a use case scenario representing the activities of the employee benefit system.(Look at the example in your textbook). (20)

Question 3

SoftWear Silhouettes is a rapidly growing mail-order house specializing in all-cotton clothing. Management would like to expand sales to the Web with the creation of an ecommerce site. The company has two full-time system analysts and one programmer. Company offices are located in a small, isolated New England town, and the employees who handle the traditional mail-order business have little computer training.

- 3.1 Considering the company's situation, draw up a list of software attributes that SoftWear Silhouettes should emphasize in its choice of software to create a website and integrate the mail-order business with business from the website. (5)
- 3.2 Would you recommend COTS software, custom software, or outsourcing to a SaaS? State your choice and defend it in a paragraph. (5)
- 3.3 Argue the variables that contributed to your response in 3.2. (5)
- 3.4 Appraise the five criteria for systems project selection. (5)

[20]

Question 4

4.1 The following is the first interview report filed by one of your systems analysis team members: "In my opinion, the interview went very well. The subject allowed me to talk with him for an hour and a half. He told me the whole history of the business, which was very interesting. The subject also mentioned that things have not changed all that much since he has been with the firm, which is about 16 years. We are meeting again soon to finish the interview, because we did not have time to go into the questions I prepared."

- a. In two paragraphs, critique the interview report. What critical information is missing? (3)
- b. What information is extraneous to the interview report? (3)
- c. If what is reported actually occurred, what three suggestions do you have to help your teammate conduct a better interview next time? (5)

4.2 "Here's the main policy manual we've put together over the years for system users," says Al Bookbinder, as he blows the dust off the manual and hands it to you. Al is a document keeper for the systems department of Prechter and Gumbel, a large manufacturer of health and beauty aids. "Everything any user of any part of the system needs to know is in what I call the Blue Book. I mean it's chock-a-block with policies. It's so big, I'm the only one with a complete copy. It costs too much to reproduce it." You thank Al and take the manual with you. When you read through it, you are astonished at what it contains. Most pages begin with a message such as: "This page supersedes page 23.1 in manual Vol. II. Discard previous inserts; do not use."

- a. List your observations about the frequency of use of the Blue Book. (2)

- b. How user friendly are the updates in the manual? Write a sentence explaining your answer. (3)
- c. Write a paragraph commenting on the wisdom of having all-important policies for all systems users in one book. (3)
- d. Suggest a solution that incorporates the use of online policy manuals for some users. (4)

[23]

Please note the following important message:

Please note that the assignment covers the syllabus in Part One of the textbook as indicated elsewhere in the Tutorial Letter. You are required to discuss the topics in the questions. Therefore you have to write an essay type answer where the topic is discussed in detail. Consequently, if you use a bullet style answering the questions you will be penalised and only half the marks will be awarded.

TOTAL MARKS: 100

**ASSIGNMENT TWO (Unique Number 719630)
DUE DATE 26 AUGUST 2016**

Question 1

C. N. Itall has been a systems analyst for Tun-L-Vision Corporation for many years. When he came on board as part of the systems analysis team and suggested prototyping as part of the SDLC for a current project, C. N. said, "Sure, but you can't pay any attention to what users say. They have no idea what they want. I'll prototype, but I'm not 'observing' any users."

1.1 As tactfully as possible, so as not to upset C. N. Itall, make a list of the reasons that support the importance of observing user reactions, suggestions, and innovations in the prototyping process. (10)

1.2 In a paragraph, describe what might happen if part of a system is prototyped and no user feedback about it is incorporated into the successive system. (4)

[14]

Question 2

2.1 Argue the eight specific categories that each entry in the data dictionary should contain. Briefly give the definition of each category. (8)

2.2 Discuss are the two building blocks of structured English? (2)

2.3 Argue five conventions that should be followed when using structured English.

(5)

2.4 Appraise what the concept of structural things includes.

(14)

[29]

Question 3

“I don’t need to see it very often, but when I do, I have to be able to get at it quickly. I think we lost the last contract because the information I needed was buried in a stack of paper on someone’s desk somewhere,” says Luke Alover, an architect describing the company’s problems to one of the analysts assigned to the new systems project. “What I need is instant information about how much a building of that square footage cost the last time we bid it; what the basic materials such as steel, glass, and concrete now cost from our three top suppliers; who our likely competition on this type of building might be; and who comprises the committee that will be making the final decision on who gets the bid. Right now, though, it’s in a hundred reports somewhere. I have to look all over for it.”

3.1 Given the limited details you have here, write a paragraph to suggest an output method for Luke’s use that will solve some of his current problems. In a second paragraph, explain your reasons for choosing the output method you did. (Hint: be sure to relate output method to output content in your answer.) (5)

3.2 Luke’s current thinking is that no paper record of the output discussed needs to be kept. In a paragraph, discuss what factors should be weighed before displayed output is used to the exclusion of printed reports. (2)

3.3 Make a list of five to seven questions concerning the output’s function in the organization that you would ask Luke and others before deciding to do away with any printed reports currently being used. (5)

3.4. Argue the factors that the analyst must consider when choosing an output technology. (10)

[22]

Question 4

Speedy Spuds is a fast-food restaurant offering all kinds of potatoes. The manager has a 30-second rule for serving customers. Servers at the counter say they could achieve that rule if the form they must fill out and give to the kitchen crew were simplified. The information from the completed form is keyed into the computer system at the end of the day, when the data entry person needs to enter the kind of potato purchased, additional toppings purchased, the quantity, and the price charged. The current form is difficult for servers to scan and fill out quickly.

4.1 Design and draw a form (you choose the size, but be sensible) that lists possible potatoes and toppings in a manner that is easy for counter servers and kitchen crew to scan, and can also be used as input for the inventory/reorder system that is on the extranet

connecting Speedy Spuds and Idaho potato growers. (Hint: remember to observe all the guidelines for good form design.) (10)

4.2 Design and draw a representation of a display screen that can be used by the servers and clerks to fill in the information captured on the form. (5)

4.3 Given the following file of renters

Record Number	Last Name	Apartment Number	Rent	Lease Expires
41	Warkentin	02	550	4/30
42	Buffington	204	600	4/30
43	Schuldt	103	550	4/30
44	Tang	209	600	5/31
45	Cho	203	550	5/31
46	Yoo	203	550	6/30
47	Pyle	101	500	6/30

1. Show an example of projection. (5)
2. Show an example of selection. (5)
3. Show two different examples of sorting rows. (5)
4. Show an example of calculating totals. (5)

[35]

Total mark: 100

Please note the following important message:

Please note that the assignment covers parts of the textbook as indicated. You are required to discuss the topics in the questions. Please do the “Problem” questions as well as the review questions in preparation for the examination.

9 OTHER ASSESSMENT METHODS

There are no other assessment methods.

10 EXAMINATIONS

EXAMINATION INFORMATION	
Type of examination	Closed book
Examination Duration	3 Hours
Examination Language	English
Calculators allowed - Memories of programmable calculators must be cleared in the presence in invigilator prior to start of the examination	Yes

Take note: The examination will require description of fundamental theories as well as calculations of problems.

11 FREQUENTLY ASKED QUESTIONS

ARE THERE ANY ADDITIONAL SELF ASSESSMENTS I SHOULD CONSIDER OTHER THAN THE ASSIGNMENTS?

The list of *Practice Questions* will be posted on *MyUnisa* as *additional information*. They are not to be submitted and no memos will be provided. However I will be available to discuss any difficulties you may have with these problems. You can also look for plenty of practice questions in the prescribed textbook.

The *my Studies @ Unisa* brochure contains an A-Z guide of the most relevant study information.

12 SOURCES CONSULTED

You should consult wider than only the prescribed textbook when preparing your assignment for submission and for the examination. Doing so would prepare you and enhance your understanding of the application of the theory better.

13 CONCLUSION

In conclusion, I would like to implore you to prepare yourself well for the submission of the assignment questions at the respective due dates. It is an important part of preparing for the year end examination. Problems that you have experienced during you assignment preparation will persist if you do not address it to the lecturer. Please remember that there is no such thing as a stupid question.

14 ADDENDUM

There is none

Systems analysis and design is a proven methodology that helps both large and small businesses reap the rewards of utilizing information to its full capacity. As a systems analyst, the person in the organization most involved with systems analysis and design, you will enjoy a rich career path that will enhance both your computer and interpersonal skills. Systems Analysis and Design (SAD) is an exciting, active field in which analysts continually learn new techniques and approaches to develop systems more effectively and efficiently. However, there is a core set of skills that all analysts need