



COMPUTERS IN NURSING &  
HEALTH CARE

NUR 316

**Course Name**

**Code No.**

**I. PHILOSOPHY/GOALS:**

This module of the clinical course is intended to assist nursing students to become computer literate. It is designed to expand communication skills and to increase technological skills.

This computer opportunity is meant to increase the student's awareness of the use of computers in various sections of our society. Since the application of computing skills is necessary to today's nurse, it will focus on the integration of computers into health care areas.

**II. COURSE OBJECTIVES:**

This module will outline basic computer terminology concepts, skills and applications to nursing education, nursing practice and health care. Upon successful completion of this module, the student will be able to:

1. Demonstrate basic computer literacy skills.
2. Apply knowledge about types of computers and computer systems.
3. Use various computer programs, included simulations for nursing students, health information systems.
4. Evaluate computer software packages for nursing and health care.
5. Review ethical issues arising from computer use in health care.
6. Successfully use a computer for a variety of applications.

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**III. TOPICS TO BE COVERED:**

1. Computer concepts and terminology
2. Types of computers & computer systems
3. Roles of hardware and software
4. How to use micros
5. Data processing cycle
6. How to choose computer suitability
7. Types of software packages, MS-DOS, graphics, HIS, word processing
8. Organizing & managing data
9. Computers in nursing education programmes
10. Evaluating criteria for nursing packages
11. Your role as a nurse working with computers - technological skills, personal characteristics, attitudes
12. Determining your level of comfort with computer use
13. Examine possible use/limitations/cost of a system
14. Communication Technology Networking in health care
15. Computer use in health care setting
16. Predicting trends in computers and health care
17. Ethical issues in computers and health care
18. RNAO roles and responsibilities
19. Abuse and remedies

**LEARNING ACTIVITIES**

**REQUIRED RESOURCES**

**BASIC COMPUTER CONCEPTS AND TERMS**

- |                                                                                                                      |                                                                                              |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Develop computer literacy skills:<br>a) explain basic concepts & terms<br>b) demonstrate basic skills & applications | Text - end of each chapter<br>Lab - SDL exercises<br>Personal Computer<br>Instructor Program |
| 2. Discuss the computer socialization process in nursing & health care.                                              | Text - Chapter 1                                                                             |
| Classify different types of computers and computer systems & describe their uses.                                    | Text - Chapter 1                                                                             |

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**HARDWARE/SOFTWARE**

- |                                                       |                     |
|-------------------------------------------------------|---------------------|
| 4. a. Describe roles of hardware & software,          | Text - Chapter 2    |
| b. Explain levels of computer hardware & software.    |                     |
| c. Use relevant micro computers & software packages.  | Lab - SDL exercises |
| d. Successfully use a computer for a variety of uses. | Lab - SDL exercises |

**COMPUTER SYSTEMS**

- |                                                                                       |                     |
|---------------------------------------------------------------------------------------|---------------------|
| Describe the data processing cycle:                                                   | Text - Chapter 3    |
| a) Identify 5 major components of a computer.                                         | PC-Instruction pkg. |
| b) State function of each component & discuss their interrelationships to the system. |                     |

Discuss & formulate a list of examples where computers are used in the home, in travel, business, industry, work places.	Small Group Exercise
--------------------------------------------------------------------------------------------------------------------------	----------------------

Relate the system of input processing & output to each of the above examples.

Identify characteristics of computers which determine suitability for certain uses:

- |                       |                      |
|-----------------------|----------------------|
| - memory size         | Text - Chapter 2 & 3 |
| - processing speed    |                      |
| - peripheral capacity |                      |
| - auxiliary storage   |                      |
| - number of uses      |                      |
| - cost                |                      |
| - applications        |                      |

Examine how a system can be used:

- possible uses
- limitations
- costs of use

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**SOFTWARE PROGRAMS:**

- |    |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                             |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Identify software packages that accomplish specific purposes: <ul style="list-style-type: none"><li>- MS Dos - what it does</li><li>- graphics</li><li>- word processing</li><li>- spread sheets</li><li>- data base, information management</li><li>- HIS - Hospital Information Systems</li></ul>                                                | Text - Chapter 4,5,6<br><br>Appendix A                                                                                                                                      |
| 11 | Use specific programs for word processing to accomplish: <ul style="list-style-type: none"><li>a) loading/booting up a program</li><li>b) selecting from menu items</li><li>c) organizing, modifying &amp; managing data</li><li>d) examining role of data in a system</li><li>e) becoming familiar with other functions of this program</li></ul> | Veazie, S., Donkmyer L., HIS, MIS, DBMS, Sorting out the letters. <u>Computers</u> in Nr, p. 9-16, 1980<br><br>Word Perfect 5.1<br>Lab - SDL exercises<br>Text - Appendix B |

**COMPUTERS IN NURSING EDUCATION**

- |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                     |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12. | Examine the use of computers in Nursing programs. <ul style="list-style-type: none"><li>- history</li><li>- simulation packages</li><li>- data processing</li><li>- decision making/problem solving</li><li>- self directed learning package</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                     |
| 13. | Establish & use criteria for evaluating software/hardware. <ul style="list-style-type: none"><li>a) determine how to choose useful nursing application packages</li><li>b) evaluate programs used for nursing situations</li><li>c) describe your role as a nurse in data processing &amp; data analysis</li><li>d) discuss ways in which computers may be used directly in patient care.<ul style="list-style-type: none"><li>- client monitoring</li><li>- planning patient care</li><li>- documentation</li></ul></li><li>e) discuss the role of nursing in choosing, inputting &amp; implementing a computer system in the health care setting.</li></ul> | Small group activity<br><br>Lab SDL exercise<br><br>Text - Chapter 10,11<br>Happ, B., <u>Should Computers Be Used in the Nursing Care of Patients?</u> <u>Nr. Management</u> 14(7), p. 31-35, 1983. |

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14. Determine level of comfort with use of simple software program.

**COMMUNICATIONS & NETWORKING**

15. Describe fundamentals of data communication technology with use of computers at home or in workplace.

Text - Chapter 7

16. Identify & compare the major languages used in computer programs.

Text - Appendix D

**COMPUTERS IN HEALTH CARE**

17. Observe/utilize computer technology in various work settings in health care.

Field work exercise in selected health care agencies

18. Explore & predict the trends of computers in society & in particular health care.

Text - Chapter 8,9,10,12,14

19. Discuss the diverse number of technological jobs that exist plus the training, personal characteristics & attitudes needed to be successful in some of them.

**ETHICAL CONSIDERATIONS**

20. Outline specific ethical issues arising from computer use in health care.

Text - Chapter 13  
Case Studies

21. Outline responsibilities of government & professional associations:  
a) in directing the evaluation of information processing  
b) maintaining effective controls.

22. Become aware of areas of possible abuse of computers & of the remedies available should abuse occur.

Sault College and  
Institution Policies

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**V. EVALUATION METHODS: (includes assignments, attendance requirements, etc.)**

Grading will be based on:

1. Attendance a) class  
b) SDL hour
2. Assignments & Tests - To be announced first week of class.

Satisfactory/Unsatisfactory is the grading system.

This S/U will appear on your clinical course NUR 316 under clinical objective\_\_\_\_\_.

- \* Attendance is not optional - it counts toward your clinical time. You will need to complete assignments and achieve 60% + on tests/exercises to earn a Satisfactory grade.

**VI. REQUIRED STUDENT RESOURCES**

TEXT:

- Sandra Anderson, Computer Literacy for Health Care Professionals, Delmar Publishers Inc., Albany NY, 1992 (Nelson, Canada)  
- 2 disks 5 1/4" double density D.S.  
- duotang folder to hand in lab assignments

**VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION: (title, publisher, edition, date, library call number if applicable)**

Ball, M.J. & Hannah, K. J., Using Computers in Nursing, Reston, V.A., Reston 1984, Chapter 5 pp. 68-84.

Happ, B., Should Computers be Used in the Nursing Care of Patient? Nr Management 14(7), p. 31-35, 1983.

McNeill, D.G., Developing the Complete Computer Based Information System, Journal of Nr. Administration 79(11), p. 34-46, 1979.

Veazie, S., Donkmyer, T., HIS, MIS, DBMSs: Sorting out the Letters, In R.D. Zielstorff (Ed), Computers in Nr. p. 9-16 Rockville, M.D., Aspen Systems (1980).

Wasseling, E., Automating the Nr. History & Care Plan, In R. D. Zielstorff (Ed), Computers in Nr. 1980 (reprinted for J. of Nr. Admin 1972 May-June) p 73-80, Rockville, M.D., Aspen Systems.

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**VII Con't**

- Dione, J. Skiba & Mark Slichter: Of Bits fi Bytes: AJN, January 1984, p. 102-103.
- Joyce M. Laborde, Expert Systems for Nursing? Computers in Nr. July/August '84', p. 130-135.
- D. Milholland, V. Cardona, Computers at the Bedside, AJN, Sept '83', p. 1304-1307.
- Hannah, K.J., "Computers in Nursing Practice", in Baumgart, A.J. & Larsen, J., Canadian Nursing Faces the Future, The C.V. Mosby Co., St. Louis, 1988.p. 263+.
- Ford, J. "Computers and Nursing - Possibilities of Transforming Nursing", Computers in Nursing, July/August, 1990.
- Lee, A.A., "What Computers Can Do For You...and what they're already doing for the lucky few", RN, September, 1982.
- Muirhead, R., "Happening Now: The Decline and Fall of Paperwork" RN, August, 1982.
- Sinclair, V.G., "Potential Effects of Decision Support Systems on the Role of the Nurse", Computers in Nursing, March/April, 1990.

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**FACULTY REFERENCES;**

- P. Ellis, Matching Students with Clinical Experiences by Computer  
Nr Outlook, Jan '82', p. 29-30.
- C. Watkins, Student Evaluation by Computer, Nr Outlook,  
July '75', Vol. 23, No. 7, p. 449-452.
- V. Feeg, The Computer Education Challenge to Nr. Education,  
Computers in Nr., Vol. 2 No. 3, May/June '84'.
- T. Manning, Computer Assisted Instruction, Computers in Nr.,  
Dec '84', p. 222,223.
- S.L. Mellow, Nr. Educators' & Nursing Service Personnel's  
Knowledge of & Attitudes Toward Computer Use in Nr. Practice,  
Abstract, 1985, 0195-4210/85 0000/0835.
- K. Mikon, Creating a Climate for Computer Integration into the  
Curriculum, 1984, Abstract, CH 2090-9/84/0000/0689.
- D. Billings, Evaluating computer assisted instruction, Nr.  
Outlook, 1984, No 32, p. 50-53.
- Mikon, K. Computer Integration, A Challenge for Nr. Ed., Nr.  
Outlook, No 32, p. 6.
- P. Cheung, Put Test Questions on Computer - (setting up test  
bank)
- M. A. Murphy, Computer Based Education in Nr., Vol. 2 No 6,  
Computers in Nr, Nov/Dec '84', p. 218-223.
- Levine, Wiener, Let the Computer Teach It, AJN 1975(8)  
p.1300-1302

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**VIII. SPECIAL NOTES/STUDENTS RESPONSIBILITIES**

A Wing computer rooms: A202, A214  
- open between hours of \_\_\_\_\_  
- days of week  
- weekends

Learning Assistance Center Computers:

Computers in Health Sciences:

To ensure your use of lab machines in F wing, you will need to sign up for a 1 hour slot in the first week of school. See Lab Tech for schedule of machines and times during week.

Other computers in the college are available for your use as well but to ensure you have lab time, you will need to schedule this hour & check in with the Lab technician.

Rules for use of Health Sciences Computers

- 1) You must be a student registered in one of the Health Science Programmes. No guests due to limited space.
- 2) No eating or drinking at or near the computers - leave outside door.
- 3) No smoking at or near the computer - Health Sciences is a smoke free environment.
- 4) No playing games on the computers.
- 5) Do not remove any computer equipment from machines or cabinets.
- 6) Non-college use of computers is not allowed.
- 7) Disks may be signed out from lab technician. You must leave your ID card and sign the log. Record data/time/name of software/signature. Lab tech will record time/date returned and initial.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.