DURHAM COLLEGE
SUCCESS MATTERS

School of Business, IT & Management

Data Communications and Networking I

2018-19 Academic Year

Program	Year	Semester
BITM-Computer Foundations Certificate	1	1
BITM-Computer Programmer Diploma	1	1
BITM-Computer Systems Technician Diploma	1	1
BITM-Computer Systems University Transfer to UOIT Bachelor of IT (Hons) Diploma	1	1
BITM-Computer Programmer Analyst Advanced Diploma	1	1
BITM-Computer Systems Technology Advanced Diploma	1	1

Course Code:	DCOM1100	**Course Equiv. Code(s):**	DCOM 1150
Course Hours:	56	**Course GPA Weighting:**	4
Prerequisite:	N/A		
Corequisite:	N/A		
Laptop Course:	**Yes** [X]	**No** [ ]	
Delivery Mode(s):	**In class** [X]	**Online** [ ]	**Hybrid** [ ] **Correspondence** [ ]
Authorized by (Dean or Director):	Marianne Marando	**Date:**	July 2018

Prepared by		
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Course Description:

DCOM1100 is the first of four courses that helps prepare the student towards many of the objectives of the Cisco Certified Network Associate (CCNA) accreditation. This course provides students with a knowledge of the principles and topologies used in data communications today by instructing students in introductory network concepts, network devices and protocols. Current market analysis indicates networking and more specifically internetworking is in very large demand. From corporations to small office sites and even into “smart” homes there is a growing need to interconnect computerized equipment. This course gives programming students a base knowledge in networking and prepares systems students to continue their network systems education in the DCOM 2100 course in semester 2.

Subject Eligibility for Prior Learning Assessment & Recognition (PLAR):

Prior Learning Assessment and Recognition (PLAR) is a process a student can use to gain college credit(s) for learning and skills acquired through previous life and work experiences. Candidates who successfully meet the course learning outcomes of a specific course may be granted credit based on the successful assessment of their prior learning. The type of assessment method (s) used will be determined by subject matter experts. Grades received for the PLAR challenge will be included in the calculation of a student’s grade point average.

The PLAR application process is outlined in http://www.durhamcollege.ca/plar. Full-time and part-time students must adhere to all deadline dates. Please email: PLAR@durhamcollege.ca for details.

PLAR Eligibility

Yes [X] **No** [ ]

PLAR Assessment (if eligible):

- [ ] Assignment
- [ ] Exam
- [X] Portfolio
- [X] Other

Students eligible for PLAR evaluation for this course must have significant applicable industry experience and/or current relevant industry certification. At the Professor's discretion, students may still be required to complete theoretical and/or practical evaluation as part of the PLAR. These practical or theoretical evaluations must ensure that the Course Learning Outcomes are achievable by the student.

Course Learning Outcomes

Course Learning Outcomes contribute to the achievement of Program Learning Outcomes for courses that lead to a credential (e.g. diploma). A complete list of Vocational/Program Learning Outcomes and Essential Employability Skill Outcomes are located in each Program Guide.

Course Specific Learning Outcomes (CLO)

Student receiving a credit for this course will have reliably demonstrated their ability to:

CLO1	Describe the devices and services used to support communications in data networks found in small to medium business environments according to current industry standards
CLO2	Describe the role of protocols as they are associated with the layers of the OSI and TCP/IP Models in data networks found in small to medium business environments according to current industry standards
CLO3	Describe the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments in keeping with industry best practices
CLO4	Apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 networks found in small to medium business environments in keeping with industry best practices
CLO5	Build a simple Ethernet network using routers and switches as would be found in a small to medium business environment utilizing current technologies and techniques
CLO6	Use Cisco command-line interface (CLI) commands to perform basic router and switch configurations for a small to medium sized business environment according to current industry standards

Essential Employability Skill Outcomes (ESSO)

This course will contribute to the achievement of the following Essential Employability Skills:

- [X] EES 1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
- [X] EES 2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.
- [ ] EES 3. Execute mathematical operations accurately.
- [ ] EES 4. Apply a systematic approach to solve problems.
- [ ] EES 5. Use a variety of thinking skills to anticipate and solve problems.
- [X] EES 6. Locate, select, organize, and document information using appropriate technology and information systems.
- [ ] EES 7. Analyze, evaluate, and apply relevant information from a variety of sources.
- [ ] EES 8. Show respect for the diverse opinions, values, belief systems, and contribution of others.
- [X] EES 9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
- [ ] EES 10. Manage the use of time and other resources to complete projects.
- [ ] EES 11. Take responsibility for one's own actions, decisions, and consequences.

Evaluation Criteria:

The Course Learning Outcomes and Essential Employability Skills Outcomes are evaluated by the following evaluation criterion.

Evaluation Description	Course Learning Outcomes	EESOs	Weighting
Journal	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6	EES1, EES6	10
Module exams	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6	EES1, EES2, EES6	10
Labs	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6	EES1, EES2, EES6, EES9	40
Midterm (ex. assignment/project/test)	CLO1, CLO2, CLO3, CLO4	EES1, EES2, EES6	15
Cable Making (5 cables, minimum 4 straight through)	CLO5	EES6	5
Final (ex. project/practical)	CLO2, CLO4, CLO5, CLO6	EES1, EES2, EES6	20
Total			**100%**

Notes:

1. Any projects requiring a presentation must be handed in to the Professor a minimum of 48 hours prior to the presentation in electronic format. It must contain all the items in the presentation, including any presentation notes. Content marks will be based on the pre-presentation electronic submission.
2. If a project evaluation requires booking a test time with the professor, it is up to the student to book the time at least 3 days prior to the beginning of the evaluation period. Due dates and times of evaluations will be announced in class and posted on DC Connect at least a week in advance of the beginning of the evaluation period. If changes to the evaluation period are required, students will be notified in writing as soon as possible.
3. Submissions must be of professional quality and use proper APA document formatting as well as in-line and References page citations.
4. Assignments are due by the due date assigned in class and posted on DC Connect. At his or her own discretion and depending on the nature of the assignment, each Professor will provide a facility for the submission of late assignments up to a maximum of 72 hours after the assignment due date. All allowed late submissions will be assessed a penalty of 25% of the total possible grade for the assignment, regardless of the number of hours late up to but not beyond 72 hours. Assignments should be submitted on time, on a regular basis, to enable you to stay on track within the class.
5. All assignments will be marked and returned within 10 days after the due date of each assignment as posted on DC Connect.
6. All marks are conditional upon final review by the Professor at the end of the course, at which time marks may be changed if conditions dictate. Conditions that may dictate a change include academic integrity issues, among other things.
7. All tests and exams are considered as copyright material. Students will not copy (in any manner) the material presented in a test or a practice test. Failure to observe this will result in a zero (0) on a test or possible expulsion from the class. See the Student Handbook regarding Academic Honesty.
8. Plagiarism is a serious breach of the College's Academic Integrity policy. That policy, defined in ACAD-101 and the accompanying procedure, defined in ACAD-101-1 will be enforced on any students involved in incidents of plagiarism, of any type. This could include any or all of the following: a mark of zero on an evaluation, a mark of zero in the course, non-admittance to a course or program, withdrawal from a course, or dismissal from the college. In all cases, a formal Academic Alert will be issued that will document the infraction that has taken place, notification will be given to the Dean/Associate Dean and a record will be placed in the student's file.
9. QUIZZES: Quizzes are scheduled from time to time either at the professor's discretion, or as dictated in the course outline. Quizzes are conducted online either in-class or outside the class time, during a pre-determined window of availability. Once a student begins a quiz, they will have a limited amount of time to complete it

before submission is forced and beyond the control of the student. If a student is absent when the quiz is assigned, he/she will receive a mark of "0" for that quiz.
Missed Tests

Tests must be written during the scheduled test time. To reflect established practice in the workplace and demonstrate responsibility, students are required to contact their professor 48 hours Prior to an assignment if there is a known conflict, or 24 hours after of the test if unable to be in attendance for a test. Voicemail messages and email messages are an acceptable form of contact. A failure to comply will result in a mark of zero for that test. Students can expect to provide a reasonable explanation for their missed test, and faculty will have discretion regarding the eligibility and granting of the request to complete the missed test.

Given compliance with point one of this section, the professor will determine how the weighting of a missed test will be applied.

TEST(S): Tests can be both theoretical and practical. The practical aspect of the student's work will be evaluated by means of lab assignments and or testing, verbal or written during said lab assignments. . Tests must be written during the scheduled test time in the room designated by the instructor. There will be no "make up" tests, a student cannot present alternative or replacement work as a substitute except as explained in the next paragraph.

Missed Final Evaluations (that are not tests)

Final evaluations must be completed at their scheduled time or submitted on their due date. If students are unable to comply with that date, they must contact their professors within 24 hours of the date. Voicemail messages and email messages are an acceptable form of contact. A failure to comply will result in a mark of zero for the final evaluation. Students can expect to provide a reasonable explanation for their missed evaluation, and faculty will have discretion regarding the eligibility and granting of the request to complete the missed evaluation.

Given compliance with point one, the student may be permitted to complete the evaluation at a later date. Students will work directly with their faculty to arrange a suitable time/date if applicable.

Required Text(s) and Supplies:

Recommended Resources (purchase is optional):

N/A

Policies and Expectations for the Learning Environment:

General Policies and Expectations:

General College policies related to	General policies related to
+ Acceptable Use of Information Technology	+ attendance
+ Academic Policies	+ absence related to tests or assignment due dates
+ Academic Honesty	+ excused absences
+ Student Code of Conduct	+ writing tests and assignments
+ Students' Rights and Responsibilities can be found on-line at http://www.durhamcollege.ca/academicpolicies	+ classroom management can be found in the Program Guide (full time programs only) in MyCampus http://www.durhamcollege.ca/mycampus/

Course Specific Policies and Expectations:

Course Specific Policies and Expectations:

In order for this course to be successful, the following is expected:

1. All class work is expected to be done individually unless specifically stated by the Professor. Groups may be assigned or modified by the Professor, randomly assigned, or determined by the students at the discretion of the Professor. All team members will be expected to contribute equally to the assignments and will be responsible for their individual work.

2. Students are expected to visit and use DC Connect on a regular basis. DC Connect is the primary means of communications between the Professor and the student for all course related materials. Assignments that require electronic file submissions must be submitted via Dropbox/Turnitin or attached to the appropriate discussion box forums, at the Professor's discretion, and not submitted through email.

3. One of the primary goals of our Professors is to maintain the learning environment and electronic distractions can be disruptive to students as well as Professors. It is asked that all students assist with maintaining a productive learning environment for all by turning off or muting any cell phones, pagers, and electronic devices (including e-chat programs). Students are expected to abide by the Acceptable Use Policy for all labs and lab equipment.

4. Marks are not given for attendance, however, marks may be given for participation, contribution to group work, or in-class labs and an opportunity to make up these marks will not be provided. To be successful in this class, it is expected that students will attend all in-person classes and complete all assigned work in a timely and professional manner.

Laptop Policies and Expectations:

1. The student's laptop is expected to be in working condition for all classes/labs. There will be times during a session that the laptop is not required. When asked, the student is expected to close their laptop until instructed to open it again.

2. Computer gaming, chatting and other distractions will not be tolerated during class/lab. Any student participating in the same will be asked to leave the classroom for the remainder of the class/lab and will be recorded as absent for that class/lab. Students are to view, understand and abide by the Acceptable Use Policies as posted on DC Connect. Strict compliance with these policies is required at all times. Any violation of these policies will result in expulsion from the lab/class and disciplinary actions as deemed by the Associate Dean/Dean.

3. Inappropriate desktop background or screen savers will not be tolerated in accordance with the acceptable use policies.

General Course Outline Notes:

1. Students should use the course outline as a learning tool to guide their achievement of the learning outcomes for this course. Specific questions should be directed to their individual professor.
2. The college considers the electronic communication methods (i.e. DC Mail or DC Connect) as the primary channel of communication. Students should check the sources regularly for current course information.
3. Professors are responsible for following this outline and facilitating the learning as detailed in this outline.
4. Course outlines should be retained for future needs (i.e. university credits, transfer of credits etc.)
5. A full description of the Academic Appeals Process can be found at http://durhamcollege.ca/gradeappeal.
6. Faculty are committed to ensuring accessible learning for all students. Students who would like assistance with academic access and accommodations in accordance with the Ontario Human Rights Code should register with the Access and Support Centre (ASC). ASC is located in room SW116, Oshawa Campus and in room 180 at the Whitby Campus. Contact ASC at 905-721-3123 for more information.
7. Durham College is committed to the fundamental values of preserving academic integrity. Durham College and faculty members reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that by taking this course all assignments could be subject to submission either by themselves or by the faculty member for a review of textual similarity to Turnitin.com. Further information about Turnitin can be found on the Turnitin.com Web site.

Learning Plan

The Learning Plan is a planning guideline. Actual delivery of content may vary with circumstances.

Students will be notified in writing of changes that involve the addition or deletion of learning outcomes or evaluations, prior to changes being implemented, as specified in the Course Outline Policy and Procedure at Durham College.

Wk.	Hours: 4 Delivery: In Class
1	**Course Learning Outcomes** CLO1, CLO2
	Essential Employability Skills EES1, EES2, EES6
	Intended Learning Objectives Review course outline; Discuss journal requirements and module exam completion; Globally Connected; LANs, WANs, and the Internet; The Network as a Platform; The Changing Network Environment; Rules of Communication; Network Protocols and Standards; Data Transfer in the Network;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Modules 1 & 3 exams
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: modules 1 & 3 Lab environment Laptop and Internet DC Connect Journal
	Evaluation — **Weighting** Module exams (10% ongoing) — 10% ongoing

Wk.	Hours: 4 Delivery: In Class
2	**Course Learning Outcomes** CLO1, CLO2
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Globally Connected; LANs, WANs, and the Internet; The Network as a Platform; The Changing Network Environment; Rules of Communication; Network Protocols and Standards; Data Transfer in the Network;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Modules 1 & 3 exams
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: modules 1 & 3 Lab environment Laptop and Internet DC Connect Journal
	Evaluation — **Weighting** Module exam — 50% ongoing Lab demonstration & discussion - knowledge of content covered in week 1 (40% ongoing) Journal marked - completed week 1 documentation (10% ongoing)

Wk.	Hours: 4 Delivery: In Class
3	**Course Learning Outcomes** CLO1, CLO2
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Globally Connected; LANs, WANs, and the Internet; The Network as a Platform; The Changing Network Environment; Rules of Communication; Network Protocols and Standards; Data Transfer in the Network;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Modules 1 & 3 exams
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: modules 1 & 3 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 2 Journal marked - completed week 2 documentation

Wk.	Hours: 4 Delivery: In Class
4	**Course Learning Outcomes** CLO3, CLO4
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives IPv4 Network Addresses; IPv6 Network Addresses; Connectivity Verification; Subnetting an IPv4 Network; Addressing Schemes; Design Considerations for IPv6;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Modules 7 & 8 exams
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: modules 7 & 8 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 3 Journal marked - completed week 3 documentation

Wk.	Hours: 4 Delivery: In Class
5	**Course Learning Outcomes** CLO3, CLO4
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives IPv4 Network Addresses; IPv6 Network Addresses; Connectivity Verification; Subnetting an IPv4 Network; Addressing Schemes; Design Considerations for IPv6;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Modules 7 & 8 exams
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: modules 7 & 8 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 4 Journal marked - completed week 4 documentation

Wk.	Hours: 4 Delivery: In Class	
6	**Course Learning Outcomes** CLO1, CLO2, CLO3, CLO4	
	Essential Employability Skills EES1, EES2, EES6	
	Intended Learning Objectives Practice IP Subnetting; Summary of content from weeks 1-5;	
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Midterm (ex. assignment/project/test)	
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks curriculum Lab environment Laptop and Internet DC Connect Journal	
	Evaluation Lab demonstration & discussion - knowledge of content covered in week 5 Journal marked - completed week 5 documentation Midterm (Modules 1, 3, 7 & 8)	**Weighting** 15%

Wk.	Hours: 4 Delivery: In Class
7	**Course Learning Outcomes** CLO2, CLO5
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Physical Layer Protocols; Network Media; Data Link Layer Protocols; Media Access Control;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Module 4 exam
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: module 4 Lab environment Laptop and Internet DC Connect Journal
	Evaluation **Weighting** Module exam 5% Cable Making (minimum 5 cables, minimum 4 straight through)

Wk.	Hours: 4 Delivery: In Class
8	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Introduction to using physical equipment; IOS Bootcamp; Basic Device Configuration;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Module 2 exam
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: module 2 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 7 Journal marked - completed week 7 documentation

Wk.	Hours: 4 Delivery: In Class
9	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Practice on physical equipment; Ethernet Protocol; LAN Switches; Address Resolution Protocol;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Module 5 exam
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: module 5 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 8 Journal marked - completed week 8 documentation

Wk.	Hours: 4 Delivery: In Class
10	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Practice on physical equipment; Network Layer Protocols; Routing; Routers; Configure a Cisco Router;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Module 6 exam
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: module 6 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 9 Journal marked - completed week 9 documentation

Wk.	Hours: 4 Delivery: In Class
11	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Practice on physical equipment; Transport Layer Protocols; TCP and UDP;
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Module 9 exam
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks: module 9 Lab environment Laptop and Internet DC Connect Journal
	Evaluation Module exam Lab demonstration & discussion - knowledge of content covered in week 10 Journal marked - completed week 10 documentation

Wk.	Hours: 4 Delivery: In Class
12	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Practice on physical equipment; Build a network on real equipment (2 routers & 2 switches) Static & default routes Ping & traceroute
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks Lab environment Laptop and Internet DC Connect Journal
	Evaluation Lab demonstration & discussion - knowledge of content covered in week 11 Journal marked - completed week 11 documentation

Wk.	Hours: 4 Delivery: In Class
13	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6, EES9
	Intended Learning Objectives Practice IP Subnetting; Practice on physical equipment; Build a network on real equipment (2 routers & 2 switches) Static & default routes Ping & traceroute
	Intended Learning Activities Lab exercise & active learning Discussion Journal documentation Practice Final
	Resources and References Instructor Notes and Slideshow Cisco NetAcad: Introduction to Networks Lab environment Laptop and Internet DC Connect Journal
	Evaluation Lab demonstration & discussion - build a network on real equipment (2 routers & 2 switches) Journal marked - build a network on real equipment (2 routers & 2 switches) documentation

Wk.	Hours: 4 Delivery: In Class
14	**Course Learning Outcomes** CLO2, CLO4, CLO5, CLO6
	Essential Employability Skills EES1, EES2, EES6
	Intended Learning Objectives Summary of Introduction to Networks curriculum;
	Intended Learning Activities Final (ex. project/practical)
	Resources and References Lab environment Laptop and Internet DC Connect Journal
	Evaluation **Weighting** Final (ex. project/practical) 20%