ITMO 340 RUBRIC

ITMO 340 Introduction to Data Networking and the Internet
Students may be scored on a scale of 1 to 5; scores of 2 and 4 may be interpolated.

Program Educational Objectives

Objective Score ▶	5	3	1
Perform requirements analysis, design and administration of computer and network-based systems conforming to policy and best practices, and monitor and support continuing development of relevant policy and best practices as appropriate.	The student is consistently able to perform requirements analysis, to design and administer computer and network-based systems conforming to policy and best practices, and to monitor and support continuing development of relevant policy & best practices as appropriate	The student is generally able to perform requirements analysis, to design and administer computer and network-based systems conforming to policy and best practices, and to monitor and support continuing development of relevant policy and best practices as appropriate, but this may not be consistent	The student is unable to perform requirements analysis, to design and administer computer and network-based systems conforming to policy and best practices, or to monitor and support continuing development of relevant policy and best practices
Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.	The student is consistently able to apply current technical and mathematical concepts and practices in the core information technologies and to recognize the need to engage in continuing professional development	The student is generally able to apply current technical and mathematical concepts and practices in the core information technologies and to recognize the need to engage in continuing professional development, but this may not be consistent	The student is unable to apply current technical and mathematical concepts and practices in the core information technologies, and/or to recognize the need to engage in continuing professional development

Course student outcomes

Upon completion of this course the student should be able to do the following:

Outcome Score ▶	5	3	1
Outline the basics components of a computer network using both the TCP/IP protocol suite and the OSI model	The student is able to outline the basics components of a computer network using both the TCP/IP protocol suite and the OSI model, accurately & in detail	The student is able to outline the basics components of a computer network using both the TCP/IP protocol suite and the OSI model with some omissions or inaccuracies	The student is unable to outline the basics components of a computer network using both the TCP/IP protocol suite and the OSI model
Identify the various types of network systems, including local area networks, metropolitan area networks, wide area networks, and voice/data delivery networks	The student is able to identify the various types of network systems, including local area networks, metropolitan area net-works, wide area networks, and voice/data delivery net-works, accurately & in detail	The student is able to identify the various types of network systems, including local area networks, metropolitan area net-works, wide area networks, and voice/data delivery networks with some omissions or inaccuracies	The student is unable to identify the various types of network systems, including local area networks, metropolitan area net-works, wide area networks, and voice/ data delivery networks
Describe the basics of data communications, including data, signals, conversions between data and signals, encoding techniques, multiplexing, and modulation.	The student is able to describe the basics of data communications, including data, signals, conversions between data and signals, encoding techniques, multiplexing, and modulation, accurately & in detail	The student is able to describe the basics of data communications, including data, signals, conversions between data and signals, encoding techniques, multiplexing, and modulation with some omissions or inaccuracies	The student is unable to describe the basics of data communications, including data, signals, conversions between data and signals, encoding techniques, multiplexing, and modulation
Identify the various types of error detection and error correction schemes	The student is consistently able to identify the various types of error detection and error correction schemes	The student is normally able to identify the various types of error detection and error correction schemes	The student is unable to identify the various types of error detection and error correction schemes
Identify the basics of T-carrier systems, frame relay, asynchronous transfer mode, DSL, and cable modems, and be able to compare and contrast their characteristics	The student is able to identify the basics of T-carrier systems, frame relay, asynchronous transfer mode, DSL, and cable modems, and is able to compare and contrast their characteristics accurately & in detail	The student is able to identify the basics of T-carrier systems, frame relay, asynchronous transfer mode, DSL, and cable modems, and is able to compare and contrast their characteristics with some omissions or inaccuracies	The student is unable to identify the basics of T-carrier systems, frame relay, asynchronous transfer mode, DSL, and cable modems, and is not able to compare and contrast their characteristics
Describe the basic operating procedures of the Internet and how it relates to data and voice communications	The student is able to describe the basic operating procedures of the Internet and how it relates to data and voice communications accurately & in detail	The student is able to describe the basic operating procedures of the Internet and how it relates to data and voice communications with some omissions or inaccuracies	The student is unable to describe the basic operating procedures of the Internet or how it relates to data and voice communications
Enumerate the differences between the wireless tele-phone systems D-AMPS, TDMA, CDMA, GSM, and others	The student is able to enumerate the differences between the wireless telephone systems D-AMPS, TDMA, CDMA, GSM, and others accurately & in detail	The student is able to enumerate the differences between the wireless telephone systems D-AMPS, TDMA, CDMA, GSM, and others with some omissions or inaccuracies	The student is unable to enumerate the differences between the wireless telephone systems D-AMPS, TDMA, CDMA, GSM, and others
Document the characteristics of local area networks, including hub and switch technologies	The student is able to document the characteristics of local area networks, including hub and switch technologies accurately & in detail	The student is able to document the characteristics of local area networks, including hub and switch technologies with some omissions or inaccuracies	The student is unable to document the characteristics of local area networks, including hub and switch technologies
Complete a case study in which, given a minimum set of requirements, you will recommend wide area network solutions	When given a minimum set of requirements, the student is able to recommend a valid and comprehensive set of wide area network solutions	When given a minimum set of requirements, the student is able to recommend a reasonably complete set of wide area network solutions	When given a minimum set of requirements, the student is unable to recommend wide area network solutions

Outcome Score ▶	5	3	1
Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions	The student is consistently able to analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions	The student is, under most circumstances, able to analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions	The student is unable to analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions
Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline	The student is consistently able and prepared to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements	The student in most cases is able and prepared to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements	The student is unable to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements
Identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems	The student is always able to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems	The student is occasionally able to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems, but not necessarily consistently	The student is unable to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems