

Undergraduate Distance Education Review Form

(Required for all courses taught by distance education for more than one-third of teaching contact hours.)

10-176.
App 2/8/11
Senate Info.
2/22/11

Existing and Special Topics Course

Course: DVST 095: Introduction College Mathematics II

Instructor(s) of Record: Dr. Parveen Ali

Phone: 724-357-2729

Email: pali@iup.edu

Step One: Proposer

A. Provide a brief narrative rationale for each of the items, A1- A5.

1. **How is/are the instructor(s) qualified in the distance education delivery method as well as the discipline?**
Dr. Parveen Ali has taught developmental mathematics since 1999 in both the community college and four-year university settings and has 14 years of experience teaching in public schools, giving her an in-depth understanding of developmental students and their needs. She has taught DVST 095 in the traditional classroom at IUP. Dr. Ali has received training in distance education methodologies as part of her D.Ed. degree in Curriculum and Instruction and through successful completion of IUP's Creating Effective Online Instruction Seminar offered in May 2010.

IUP's Department of Developmental Studies and the instructor of record have consulted with IUP's Online Learning Specialist in the development of this course.

2. **How will each objective in the course be met using distance education technologies?**
The online DVST 095 course uses a variety of technologies and methods to assist students in understanding and applying course concepts. Course content will be made available to the students through the course text, the university learning management system (LMS), and CourseCompass, a publisher-created web-based resource designed to accompany the text. Resources in the LMS include instructor-developed summaries of each of the course topics, directions for completing assignments, course discussions, and areas to post reflection assignments, as well as the course syllabus, student grades, links to resources, and other pertinent course information. CourseCompass includes video lectures, homework, quizzes, and exams. The video lectures provide students step-by-step demonstrations of the basic concepts in each of the chapters. CourseCompass homework also incorporates a "Show Me How" feature that demonstrates for students the steps in solving problems similar to those in their homeworks.

In completing course modules, the student will be expected to review the textbook, video lectures, and LMS-based materials. Once the student has had the opportunity to review the content he or she will be required to complete a series of homework problems assigned from the course text to be completed and submitted using CourseCompass. The student will receive full or partial credit based on his or her performance. The instructor will review students' homeworks and provide feedback in preparation for the chapter quiz. As part of each module, students will also complete a chapter reflection and participate in a chapter discussion. The reflection is designed to assist students and the instructor in understanding areas in which the students experienced difficulty and to pinpoint areas for development. The chapter discussions are designed to assist students in increasing their proficiency in math terminology and in generalizing the concepts to their personal contexts. Throughout each module, students will have access to the instructor and to tutors as part of supplemental instruction.

In addition to the previously listed technological solutions, students will also be required to purchase a Web cam and use Skype to communicate with both the instructor and the tutors who are part of supplemental instruction.

Received

FEB 1 2011

Liberal Studies

Received

MAR 3 2010

Liberal Studies

More specifically, the means by which each course objective will be met via distance education technologies is summarized below:

After completing this course, students should be able to describe and demonstrate knowledge of operations on whole numbers.

Students will learn how to solve application problems using different operations of whole numbers, order of operations, prime numbers, and prime factorization through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, chapter quiz, the mid-term, and the final submitted via CourseCompass.

After completing this course, students should be able to perform different operations on fractions and solve application problems on fractions.

Students will learn fraction notation; simplification of fractions; multiplication, division, addition, subtraction of fractions; order of operations involving fractions; application problems involving fractions, and least common multiples through materials posted on the LMS, watching web-based video instruction via CourseCompass, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, quiz, the mid-term, and the final submitted via CourseCompass.

After completing this course, students should be able to write a percent as a fraction or decimal and vice versa and solve application problems on percents.

Students will learn percent notation, percent and fraction notation, and solve percent problems using percent equations through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, the mid-term, and the final submitted via CourseCompass.

After completing this course, students should be able to create examples and calculate the mean, median, and mode.

Students will learn mean, median, and mode through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, quiz, and the final submitted via CourseCompass.

After completing this course, students should be able to appropriately construct and interpret bar, line, and circle graphs.

Students will learn how to construct and interpret bar, line, and circle graphs through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, quiz, and the final submitted via CourseCompass.

After completing this course, students should be able to simplify and evaluate algebraic expressions and translate phrases to algebraic expressions.

Students will learn how to evaluate algebraic expressions by substitutions and translate phrases to algebraic expressions through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, quiz, and the final submitted via CourseCompass.

After completing this course, students should be able to add, subtract, multiply, divide, and solve application problems involving real numbers.

Students will learn how to state the integer that corresponds to a real world situation; add, subtract, multiply, and divide real numbers; learn different properties of real numbers and their uses; and simplify expressions with real numbers using the order of operations through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, quiz, and the final submitted via CourseCompass.

After completing this course, students should be able to solve linear equations and inequalities.

Students will learn to solve linear equations and inequalities by using addition and multiplication principles. They will also learn how to plot linear equations and inequalities and solve application problems using linear equations and inequalities through materials posted on the LMS, watching web-based video instruction via CourseCompass, reading the textbook, and participating in online discussions. Students will independently practice skills using the CourseCompass homework problems and have opportunities to receive assistance and feedback from the instructor via telephone, e-mail, and Web-based videoconferencing and supplemental instruction tutors via Web-based videoconferencing. Students will also have an opportunity to obtain feedback on their understanding of course topics by responding to discussion topics in the LMS discussion forums. Student attainment of the objectives will be evaluated through performance on chapter reflections submitted via the LMS assignment tool and on homework assignments, quiz, and the final submitted via CourseCompass.

3. How will instructor-student and student-student, if applicable, interaction take place?

A variety of formal and informal interactions have been built into the course for the purposes of feedback and evaluation. Virtual office hours will be held for instructor-student interaction. Students may access the instructor through discussion boards, Web conferencing technologies (Skype), telephone, and e-mail. The instructor will be available during designated office hours and at other times by appointment as needed. The instructor will monitor student progress using LMS and CourseCompass tracking features (e.g., homework grades and quiz scores) and proactively contact students whose scores are falling below anticipated standards in order to assist them in identifying weak areas and/or issues in understanding and applying the content. The instructor will also facilitate weekly online discussion through the discussion forums to assess student understanding of basic concepts and terminology.

In addition to access to the instructor, students will be required to participate in supplemental instruction in which they will work with peer tutors via Web-based videoconferencing (Skype). Peer tutoring/supplemental instruction is available during both daytime and evening hours.

Students are expected to interact, not only with the instructor, but with each other through the online discussion forums. Students will be expected to answer discussion questions and to reply to one another on a weekly basis. The course discussions are geared toward students understanding the basic terms and concepts presented in the course and their application to real-world issues.

4. How will student achievement be evaluated?

The following activities will be used to evaluate student performance:

- Chapter Reflection (10%)—Students will write a short reflective paper, at least one page in length, at the completion of each chapter. In this paper, the student will assess their strengths and weaknesses and the concepts with which they had difficulty and provide to the instructor recommendations for how he or she can help them. Students will be evaluated on their ability to critically reflect upon their performance. Chapter reflections will be submitted via the LMS assignment tool.
- Homework Assignments (10%)—Students will complete their homework using CourseCompass. Students will be expected to maintain hard copies of their work that may be made available for faculty evaluation and review. Faculty will monitor homework scores to determine student areas for development and to facilitate student learning. Students may have multiple attempts to complete the homework assignments. Students will be evaluated on their ability to achieve the correct responses to homework items. The instructor will also be available during virtual office hours and by appointment to assist students in areas in which they are having difficulty.
- Online Quizzes (30%)—At the end of each chapter, students will complete a quiz using the CourseCompass system. The quiz will be available for two days. Students will be required to keep hard copies of their problem-solving work for their quizzes. Students will be evaluated on their ability to correctly apply concepts from the chapter.
- Online Mid-Term Exam (10%)—Students are required to take their mid-term exam during the sixth week of this course. The exam will be administered via CourseCompass and will be available for two days. This mid-term exam will cover all material covered throughout the first half of the course. Students are responsible for maintaining a hard copy of the problem-solving work for the mid-term exam. Students will be evaluated on their ability to correctly apply concepts from the chapters.
- Online Final Exam (20%)—Final exams will be held according to the university finals schedule. The cumulative final exam will be administered via CourseCompass and will be available for one day. Students are responsible for maintaining a hard copy of the problem-solving work for their final exam. Students will be evaluated on their ability to correctly apply concepts from the chapters.
- Online Discussion (10%)—For each chapter, students will be required to contribute to an online discussion that incorporates the chapter's math terminologies and their applications. These activities are designed to increase student math language proficiency. Students will post these to the LMS forum on the DVST 095 course page. Students will be evaluated on their ability to discuss the meaning of the math terminologies and to demonstrate an understanding of their real-world applications.

- Participation (10%)—Students are expected to attend classes as scheduled. Because the online course does not have a designated meeting time (with the exception of the final), class attendance will be determined by active participation in course activities, including timely completion of homework and contributions to the class discussions.

5. How will academic honesty for tests and assignments be addressed?

At the onset of the course, students will be required to review the course policies as outlined in the syllabus. Students will electronically “sign” an online statement agreeing to abide by the course policies. Included in these policies is the following statement regarding academic integrity:

Cheating Policy:

Cheating and plagiarized documents will not be tolerated for graded materials. Such acts will be dealt with according to the university policy as described in the IUP Undergraduate Catalog.

Students are expected to uphold the school’s standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. The guiding principle of academic integrity shall be that a student’s submitted work, examinations, reports, and projects must belong to the student and be a result of the student’s direct efforts.

Additionally, students will be expected to adhere to the following policy regarding homework. The instructor may spot check student work throughout the semester:

Homework Policy:

In completing homework assignments, students must maintain sheets detailing their problem-solving work. Students will be expected to maintain hard copies of their work which include individual steps for each problem solved. The instructor may request hard copies of your work throughout the semester in order to assist you and to provide feedback if you experience any difficulties. In providing these sheets, you may mail, scan and e-mail, or fax the hard copies to your instructor.

Academic integrity for quizzes and tests will be maintained using features of the online software (e.g., LMS and CourseCompass). Quizzes will only be available for a short period of time. Quizzes and exams are timed. Once the student logs in, he or she must complete the quiz/exam at that time and within the specified time period. Additionally, the quizzes and exams use large tests banks, and questions are presented in randomized format.

Step Two: Departmental/Dean Approval

Recommendation: Positive (The objectives of this course can be met via distance education)
 Negative

C. Conway 8/31/10
Signature of Department Designee Date

Endorsed: Mary Ann Rafeth 8/31/10
Signature of College Dean Date

Forward form and supporting materials to Liberal Studies Office for consideration by the University-wide Undergraduate Curriculum Committee. Dual-level courses also require review by the University-wide Graduate Committee for graduate-level section.

Step Three: University-wide Undergraduate Curriculum Committee Approval

Recommendation: Positive (The objectives of this course can be met via distance education)
 Negative

Gail Schust 9-21
Signature of Committee Co-Chair Date

Forward form and supporting materials to the Provost within 30 calendar days after received by committee.

Step Four: Provost Approval

Approved as distance education course Rejected as distance education course

Signature of Provost Date

Forward form and supporting materials to Associate Provost.

Gail:

10-17b

Revision attached

We are resubmitting the DVST 095 proposal for UWUCC approval. We believe you will find the proposal significantly improved and that it clarifies the plan for implementation of the course. The changes made to the proposal and items we would like to bring to the committee's attention include the following:

- Response to Item 2 from the Distance Education Review Form—This item has been changed to more clearly articulate, not only the technologies used in the course, but also to outline the plan for how the course would be taught, including how the resources will be used. This also highlights the incorporation of Web videoconferencing (e.g., Skype) and the use of supplemental instruction to support students throughout the course.
- The use of the term LMS and generic names for tools—Given the current status of this proposal and the transition from Moodle to Desire2Learn (D2L), we have adopted this generic terminology for the purposes of the proposal. We understand that the attached sample course materials were designed for Moodle and that this course, if approved, will be developed for D2L. These materials will be revised to incorporate D2L-specific language upon approval of DVST 09 for online delivery.
- In this revised proposal, chapter discussion forums are designed to assist students in understanding math terminology and concepts introduced in each chapter by the instructor, to increase their math language proficiency, and to enable them to connect the use of these concepts with their real-world contexts.
- Appendix A includes a letter of support from Mr. Richard Muth, Interim Director of IUP's Northpointe Campus. This letter has been provided to address UWUCC concerns regarding the willingness of branch campus deans to approve student's taking courses, such as DVST 095, online.
- Appendix B provides an annotated survey of the literature in offering online developmental courses to students.
- Appendix C provides a brief summary of a brief survey of Pennsylvania Community Colleges and their offering of developmental courses.

Thank you,

Parveen J Ali

Dr. Parveen Ali

Instructor of Record



David Bruce Porter, M.A.

Online Learning Specialist

DVST 095: Introduction to College Mathematics II
Distance Education Proposal

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DVST 095: Introduction to College Mathematics II Syllabus of Record

I. Catalog Description

DVST 095 Introduction to College Math II

3c-01-3cr

Prerequisite: May not be taken after successfully completing any course offered by the Mathematics Department, without written approval of the Department of Developmental Studies chairperson.

Designed for students who need to develop the basic mathematical skills that are essential to success in more advanced college level work. Content material includes computational skills of whole numbers, fractions, percents, data analysis, graphs, statistics, properties and operations on real numbers, simplifying algebraic expressions, and solving equations and inequalities. Carries institutional non-degree credit.

Note Regarding Course Credit: As described in the Undergraduate Catalog, this course carries institutional, non-degree credit. Institutional Credits are associated with developmental courses numbered below 100. Credits from this course do not apply toward degree requirements for graduation but are used in determining enrollment status (full- or part-time) including financial aid and athletic (NCAA) eligibility.

II. Course Outcomes:

After completing this course, students should be able to:

1. Describe and demonstrate knowledge of operations on whole numbers.
2. Perform different operations on fractions and solve application problems on fractions.
3. Write a percent as a fraction or decimal and vice versa and solve application problems on percents.
4. Create examples and calculate the mean, median, and mode.
5. Appropriately construct and interpret bar, line, and circle graphs.
6. Simplify and evaluate algebraic expressions and translate phrases to algebraic expressions.
7. Add, subtract, multiply, divide, and solve application problems involving real numbers.
8. Solve linear equations and inequalities.

III. Course Outline

A. Whole Numbers (5 hours)

1. Application and Problem Solving on Whole Numbers
2. Exponential Notation and Order of Operations
3. Factorizations
4. Least Common Multiples

Quiz 1 (1 hour)

B. Fractions (7 hours)

1. Fractional Notation and Simplifying
2. Multiplication and Division
3. Addition and Subtraction
4. Applications and Problem Solving
5. Order of Operations

Quiz 2 (1 hour)

- C. Percents (6 hours)
 - 1. Ratio and Proportion
 - 2. Percent and Fraction Notation
 - 3. Solving Percent Problems Using Percent Equations
 - 4. Sales Tax, Commission, Discount, and Interest

Mid-Term (1 hour)

- D. Data Analysis, Graphs, and Statistics (4 Hours)
 - 1. Mean, Median, and Mode
 - 2. Bar, Line, and Circle Graphs

Quiz 4 (1 hour)

- E. Introduction to Real Numbers and Algebraic Expressions (6 hours)
 - 1. Addition, Subtraction, Multiplication, and Division of Real Numbers
 - 2. Properties of Real Numbers
 - 3. Simplifying Expressions Using Order of Operations

Quiz (1 hour)

- F. Solving Linear Equations and Inequalities (6 hours)
 - 1. Solving Equations Using the Addition and Multiplication Principle
 - 2. Solving Equations Using Both the Addition and Multiplication Principle Together
 - 3. Solving Formulas
 - 4. Solving Inequality Statements
 - 5. Applications and Problem Solving

Quiz 5 (1 hour)

G. Cumulative Review Session (1 hour)

H. Group Practice Test for the Final (1 hour)

I. Final Exam (2 hours)

IV. Evaluation Methods

The grading criteria are as follows:

10% Class Participation—Students will be asked to participate in a variety of classroom exercises. Students will be encouraged to answer questions as well as ask questions to reinforce their learning.

10% Homework—Homework will be assigned from each objective to emphasize learning. Students will get additional assistance for their homework and classwork through Supplemental Instruction (e.g., peer tutoring sessions or instructor tutoring).

10% Chapter Reflection--- Students will be assigned to write a short reflective paper, at least one page in length, at the completion of each chapter. In this paper they will discuss about the concepts they have learned from the chapter and their strengths and weaknesses.

30% Quizzes—Five quizzes will be administered throughout the course to provide feedback to the instructor and students for learning outcome.

10% Class Attendance—This attendance grade will be assigned to students to promote class attendance.

10% Mid-Term Exam—This will be a cumulative exam that will be administered at the end of sixth week. Students will be made aware in advanced topics to be presented on the exam.

20% Final Exam—This is a cumulative exam that will include all materials covered during the course. The final exam will be held according to the University finals schedule.

V. Example Grading Scale

90% - 100% = A

80% - 89% = B

70% - 79% = C

60% - 69% = D

Below 60% = F

VI. Undergraduate Course Attendance Policy

Attendance is required and will contribute 10% of course grade.

VII. Required Textbook

Bittinger, M.L. & Beecher, J.A. (2007). *Developmental Mathematics* (7th ed.). Pearson Addison-Wesley.

VIII. Special Resources Requirements

None

IX. Bibliography

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Syllabus

Instructor: Dr. Parveen Ali

Email: pali@iup.edu

Phone: 724-357-4085

Office: 204A Pratt Hall

Skype: parveenali2

Virtual Office Hours:

Office hours will be held so that students can interact individually with the instructor. Time of virtual office hours will be announced on the Moodle Forums.

Technical Support:

For issues related to Moodle or IMail:

IUP IT Support Center phone: 724-357-4000, e-mail: IT-Support-Center@iup.edu, or website:

<http://www.iup.edu/itsupportcenter/>

For issues related to CourseCompass:

Website: <http://247pearsoned.custhelp.com>

Phone: 800-677-6337, Mon-Fri 8a.m.-8p.m., Sun 5p.m.-12a.m.

Required Text and Materials:

Bittinger, M.L. & Beecher, J.A. (2007). *Developmental Mathematics* (7th ed.). Pearson Addison-Wesley.

You must purchase the bundled textbook that includes the text, resource CD, and the access code for the course website. The text can be ordered from the IUP bookstore by calling 1-800-537-7916 or visiting

<http://www.iupstore.com/>.

You should also have a Web cam and microphone for Web-based videoconferencing. These items can be purchased at most retail discount stores (e.g., Wal-Mart, Kmart).

Course Web Resources:

This course will make extensive use of Web resources, particularly Moodle and CourseCompass:

Moodle—Moodle is IUP's Learning Management System. Moodle will provide you with important course information, including the course syllabus, announcements, grades, and links to course resources, including the CourseCompass system in which you will be completing practice problems, tests, and quizzes. Moodle will also be the location of course discussions.

CourseCompass—CourseCompass provides instructional resources to assist you in learning the skills presented in the course modules. Through the CourseCompass site, you will be expected to complete the homework problems, and to take your quizzes and exams.

CourseCompass Website: <http://www.coursecompass.com>

Course ID: ali74674

Required Technology Skills and Software Technology Skills:

Students enrolled in this course should possess the following technology skills:

- The ability to access information via the Web
- The ability to use Moodle system and associated tools, including discussion, quizzing, and assignment submission features
- The ability to use Internet communication tools, including e-mail and discussion boards
- The ability to demonstrate netiquette (appropriate online conduct)
- The ability to use Web videoconferencing software (e.g., Skype)

Software:

The following software is required in order to view course content and to participate in planned course activities. If you do not have this software currently loaded on your computer or are unsure, you can download the software for free by clicking on the following links:

Adobe Reader <http://www.adobe.com>

Flash Player <http://www.adobe.com>

Quicktime <http://www.apple.com/quicktime>

Skype <http://www.skype.com>

Course Credit:

As described in the Undergraduate Catalog, this course carries institutional, non-degree credit. Institutional credits are associated with developmental courses numbered below 100. Credits from this course do not apply toward degree requirements for graduation but are used in determining enrollment status (full- or part-time) including financial aid and athletic (NCAA) eligibility.

Catalog Description:

DVST 095 Introduction to College Math II

3c-01-3cr

Prerequisite: May not be taken after successfully completing any course offered by the Mathematics Department, without written approval of the Department of Developmental Studies chairperson.

Designed for students who need to develop the basic mathematical skills that are essential to success in more advanced college level work. Content material includes computational skills of whole numbers, fractions, percents, data analysis, graphs, statistics, properties and operations on real numbers, simplifying algebraic expressions, and solving equations and inequalities. Carries institutional non-degree credit.

Note Regarding Course Credit: As described in the Undergraduate Catalog, this course carries institutional, non-degree credit. Institutional Credits are associated with developmental courses numbered below 100. Credits from this course do not apply toward degree requirements for graduation but are used in determining enrollment status (full- or part-time) including financial aid and athletic (NCAA) eligibility.

Course Outcomes:

After completing this course, students should be able to:

1. Describe and demonstrate knowledge of operations on whole numbers.
 2. Perform different operations on fractions and solve application problems on fractions.
 3. Write a percent as a fraction or decimal and vice versa and solve application problems on percents.
 4. Create examples and calculate the mean, median, and mode.
 5. Appropriately construct and interpret bar, line, and circle graphs.
 6. Simplify and evaluate algebraic expressions and translate phrases to algebraic expressions.
 7. Add, subtract, multiply, divide, and solve application problems involving real numbers.
 8. Solve linear equations and inequalities.
-

Course Content:

We will cover the following chapters in the Bittinger text:

Chapter 1—Operations on Whole Numbers

Chapter 2—Fractional Notation

Chapter 4—Percent Notation

Chapter 5—Data Analysis, Graphs, and Statistics

Chapter 7—Introduction to Real Numbers & Algebraic Expressions

Chapter 8—Solving Linear Equations

Class Participation:

Per university policy, students are expected to attend classes as scheduled. Because the online course does not have a designated meeting time (with the exception of the final), class attendance will be determined by your contributions to the discussion boards and your ability to meet deadlines for assignments. You will be granted three “passes” in the event of an emergency. However, no unexcused lapses in participation will be allowed in this course. If you have an emergency, please notify the instructor in advance. A total of 100 points is allocated for participation, and there will be a 10-point deduction from the participation grade for failure to participate.

Online Etiquette:

Discussion and e-mail spaces within this course are for class purposes only, unless otherwise stated. Please remember to conduct yourself collegially and professionally. Unlike in the traditional classroom setting, what you say in the online environment is documented and not easily erased or forgotten. The following netiquette guidelines should be followed for this course:

- Avoid using ALL CAPS, sarcasm, and language that could come across as strong or offensive.
- Read all postings before posting your responses to discussion topics so as to not repeat information.
- Focus on one topic at a time when posting to discussions.
- Remember that, unlike in face-to-face learning environments, what you say in discussions is documented and can be revisited. Choose your words and discussion topics carefully.

- Course e-mail should only be used for messages pertaining to the course. Please refrain from sending forwards, jokes, etc. within course e-mail.

Course Expectations:

Each student MUST

1. Log into Moodle, CourseCompass, and IUP e-mail daily.
2. Know the due dates of all assignments and submit them on time.
3. Know the due dates of all quizzes and exams and take them on time.
3. Work INDIVIDUALLY and without any external assistance on quizzes and exams. Students may collaborate on homework assignments.

4. Participate in the Moodle Forum at least once a week.
5. Be aware that all graded homework, quiz assignments, and tests must be done by the specified time. Failure to adhere to this policy will result in a grade of zero (0) for the assignment.
6. All tests are to be completed by the individual registered for the course. Evidence of external assistance will result in an "F" for the course.

Cheating Policy:

Cheating and plagiarized documents will not be tolerated for graded materials. Such acts will be dealt with according to the university policy as described in the IUP Undergraduate Catalog.

Students are expected to uphold the school's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. The guiding principle of academic integrity shall be that a student's submitted work, examinations, reports, and projects must belong to the student and be a result of the student's direct efforts.

Homework Policy:

In completing homework assignments, you must maintain sheets detailing your problem-solving work. You will be expected to maintain hard copies of your work which include individual steps for each problem solved. The instructor may request hard copies of your work throughout the semester in order to assist you and to provide feedback if you experience any difficulties. In providing these sheets, you may mail, scan and e-mail, or fax the hard copies to your instructor.

Submitting Homework:

You will submit your homework using the publisher's CourseCompass website. You are expected to maintain paper hard copies of all of their problem-solving work per the Homework Policy previously discussed.

Supplemental Instruction

In addition to the online course materials and the instructor, you will be required to participate in the Supplemental Instruction Program. You will be working with a trained tutor during designated daylight and evening hours via Skype. Contact information for supplemental instruction will be posted in the Moodle course materials during the first week of class.

Students with Disabilities:

If you are a student who has a documented disability and need special accommodations, the instructor will work with you to provide reasonable accommodation to ensure you a fair opportunity to perform in the class. Please advise the instructor in the first week of the semester regarding the disability and the desired accommodations.

Grading Criteria:

- Participation (10%)—You are expected to attend classes as scheduled. Because the online course does not have a designated meeting time (with the exception of the final), class attendance will be determined by active participation in course activities, including timely completion of homework and contributions to the class discussions.
- Online Homework Assignments (10%)—You will complete your homework using CourseCompass. You will be expected to maintain paper hard copies of your work that may be made available for faculty evaluation and review. You may have multiple attempts to complete the homework assignments and will be evaluated on your ability to achieve the correct responses to homework problems. The instructor will also be available to assist students in areas in which they are having difficulty.
- Discussion Forums (10%)—For each chapter, you will contribute to an online discussion that incorporates the chapter's math terminologies and their applications. These activities are designed to increase your math language proficiency. You will post your responses to the discussion board in each course module. You will be graded on your ability to discuss the meaning of key terminology and to connect the terms to their real-world applications.
- Chapter Reflection (10%)—You will write a short reflective paper, at least one page in length, at the completion of each chapter. In this paper you will assess your strengths and weaknesses and the concepts with which you had difficulty and provide to the instructor recommendations for how he or she can better help you. You will be evaluated on your ability to critically reflect upon your performance. Chapter reflections will be submitted via the Moodle assignment tool.
- Online Quizzes (30%)—At the end of each chapter, you will complete a quiz using the CourseCompass system. The quiz will be available for two days. You are required to keep hard copies of your problem-solving work for all quizzes. You will be evaluated on your ability to correctly apply concepts from the chapter.
- Online Mid-Term Exam (10%)—You are required to take a mid-term exam during the sixth week of this course. The exam will be administered via CourseCompass and will be available for two days. This mid-term exam will cover all material covered throughout the first half of the course. You are responsible for maintaining a hard copy of the problem-solving work for the mid-term exam. You will be evaluated on your ability to correctly apply concepts from the chapters.
- Online Final Exam (20%)—Final exams will be held according to the University finals schedule. The cumulative final exam will cover all chapters and will be administered via CourseCompass and will be available for one day. You are responsible for maintaining a hard copy of the problem-solving work for your final exam. You will be evaluated on your ability to correctly apply concepts from the chapters.

The following grading scale will be used:

Grade	Percentage Range
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	0% - 59%

Incomplete Grades

Incomplete grades will be granted only in the event of "major life crises." The instructor reserves the rights of judgment as to what qualifies as a "major life crisis."

Withdrawal Grades

According to IUP policy, if you wish to receive a withdrawal (W) grade for the course, you must do so by the university deadline for processing withdrawals, which can be found on the IUP URSA page in the academic calendar. Students who fail to withdraw by the deadline must file for a deadline waiver through the dean of his or her college and provide documentation of catastrophic circumstances preventing the student from completing the course/semester. In the event withdrawal would be required, failure to process a withdrawal will result in a failing grade for the course.

Disagreement with Awarded Grade

If you disagree with the awarded grade or feel an error exists in the grade calculation; please contact your instructor to arrange a conference regarding your grade.

Grade Changes

Once earned grades have been recorded; they may be changed only in the case of clerical and/or calculation error or in the event of a successful grade appeal. It is not appropriate to change a grade based upon options, such as supplemental assignments, that are not equally available to all students. The deadline for corrections of clerical and/or calculation errors is the end of the next regular (fall/spring) semester after the grade has been awarded.

Tentative Course Schedule:

Below is a table listing a tentative course schedule including deadlines and other information related to course activities.

Week	Topics	Homework/reflection assign. & deadlines	Quizzes/Exams & deadlines	Forums & deadlines
1	Whole Numbers: 1.5, 1.6, 1.7, & 1.9	p 60: # 1, 3, 5, 11, 15, 17, 21, 25, 27, 29, 33, 37, 39, 45, 47, 49, 55		
		p 73: # 1–51 odd, 57, 59, 63 p 82: # 5, 7, 39–63 odd p 94: # 1–25 odd Ch. 1 Reflection Due by 6:00 pm Thursday		
2	Fraction Notation: 2.1, 2.2, & 2.3	p 111: # 1–9 odd, 15–77 odd p 119: # 1–59 odd p 127: # 1–67 odd Due by 6:00 pm Thursday	Ch. 1 Quiz Due by 6:00 pm Friday	
3	Fraction Notation: 2.4, 2.5, & 2.6	p 137: # 1–61 odd, omit 49 p 151: # 1, 3, 11–53 odd, 61, 67 p 163: # 7, 9, 13, 15, 23, 29, 57, 61, 63, 69 Ch. 2 Reflection Due by 6:00 pm Thursday		

Week	Topics	Homework/reflection assign. & deadlines	Quizzes/Exams & deadlines	Forums & deadlines
4	Percent: 4.1, 4.2, & 4.3	p. 259: #1, 5, 7, 9, 11, 17, 19, 21, 23, 25, 29, 33, 39, 41, 45, 49–61 odd, 65 p. 268 : # 5–59 odd p. 276: # 1–47 odd, 53–57 odd	Ch. 2 Quiz Due by 6:00 pm Friday	
5	Percent: 4.4 & 4.7	p. 283: # 7–33 odd p. 316: #1–29 odd, 39, 41, 47, 51, 59 Ch. 4 Reflection Due by 6:00 pm Thursday		
6	Review for the Mid-Term		Mid-Term Exam Ch. 1, 2, & 4 Due by 6:00 pm Friday	
7	Data Analysis, Graphs & Statistics: 5.1, 5.3, & 5.4	p 346: # 1, 3, 5, 9, 11, 13, 17, 19 p 364: # 1–9 odd, 21, 37 p 372: # 1–9 odd, 11, 13, 15 Ch. 5 Reflection Due by 6:00 pm Thursday		
8	Introduction to Real Numbers and Algebraic Expressions: 7.1 & 7.2	p 477: # 1–43 odd, 47, 55, 57, 59 p 489: # 9–73 odd Due by 6:00 pm Thursday	Ch. 5 Quiz Due by 6:00 pm Friday	

Week	Topics	Homework/reflection assign. & deadlines	Quizzes/Exams & deadlines	Forums & deadlines
9	Introduction to Real Numbers and Algebraic Expressions: 7.3, 7.4, & 7.5	p 497: # 1–69 odd p 503: # 1–95 odd p 511: # 1–83 odd Due by 6:00 pm Thursday		
10	Introduction to Real Numbers and Algebraic Expressions: 7.6, 7.7, & 7.8	p 520: # 1–63 odd p 532: # 13–75 odd p 542: # 1–39 odd, 77, 79 Ch. 7 Reflection Due by 6:00 pm Thursday		
11	Solving Equations & Inequalities: 8.1 & 8.2	p 556: # 1–51 odd p 562: # 1–39 odd Due by 6:00 pm Thursday	Ch. 7 Quiz Due by 6:00 pm Friday	
12	Solving Equations & Inequalities: 8.3 & 8.4	p 572: # 1–91 odd p 580: # 11–33 odd Due by 6:00 pm Thursday		
13	Solving Equations & Inequalities: 8.6 & 8.7	p 604: # 1, 3, 5, 15, 17, 19, 27, 29, 31, 37 p 617: # 1 – 73 odd Ch. 8 Reflection Due by 6:00 pm Thursday		
14	Review for Final		Ch. 8 Quiz Due by 6:00 pm Friday	
15	Final Exam		Has to be taken by the due date of final exam	

Instruction for Students:

You should attempt to do the following every week:

1. The key terms, concepts, and examples will be prepared and posted as a content module in Moodle. Print out these modules and use them as a reference and to take notes.
2. Watch videos from CourseCompass that correspond with the week's topics and take notes as you would in the classroom.
3. Read the assigned sections in the book; revise your notes with more details from your readings.
4. While doing 2 and 3, write down any questions you might have and areas that you do not understand. If the questions are not answered after watching videos and reading sessions, you should direct them to the instructor.

5. Go into the online-homework session on CourseCompass and practice every assigned problem. Use the "Help Me Solve This" button when you get stuck and then go back and finish a similar problem. All online homework is set up with unlimited attempts and unlimited time constraints. Be sure that you turn in all homework before the due date.
6. At the end of every chapter, you will take an online quiz. The online quiz covers the material for that chapter. Each quiz will allow only two attempts and must be completed within a specific time frame. Once you start the quiz, you will need to submit the quiz before the time expires. The quiz will be available for 2 days. Do not take it unless you are ready. Do not wait until the last minute either since the computer will cut the quiz off at the end of 2 days.
7. There will be two major exams: a mid-term and a final. The mid-term exam will be held at the end of course week 6. The final exam will be held according to the university finals policy, and the date and availability of the exam will be posted on the course website.

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Use the links below to jump to the individual sections of this module:

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Overview

Welcome to the DVST 095 online class. My name is Dr. Parveen Ali, and I will be your instructor for this course. This course is designed for students who need to review basic arithmetic skills and develop some elementary algebraic skills that are necessary for their success in higher level mathematics courses. Content areas include computational skills of whole numbers, fractions, percents, data analysis, graphs, statistics, properties and operations on real numbers, simplifying algebraic expressions, and solving equations and inequalities. Within the course, there will be various assignments to reinforce learning.

We will begin the course with some exercises on problem solving and applications on whole numbers, the meaning of exponential notation, and how to simplify expressions using the rules for order of operations. Your effort and the feedback you receive on these assignments will assist you in developing a basic mathematics foundation for future success in this course. It's important for you to understand that I believe that you learn through doing and that you are taking this class to learn. I realize that some of you may be good in mathematics but your mathematics skills may have faded away over time or that you may have some math anxiety. Do not despair; it is my job to teach you.

Before we begin the course, you will need to complete this introductory module to become familiar with the course expectations and policies as well as to gain a better understanding of what we have planned in the coming weeks.

Welcome to this course, and I am looking forward to working with you.

Sincerely,

Dr. Parveen Ali

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Objectives

At the completion of this unit, the student will

- Demonstrate an understanding of the course syllabus.
- Commit to the expectations set forth in the syllabus and course introduction.

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Lesson Guide

Prior to the first day of class, you will want to familiarize yourself with the course policies and expectations. I am aware that just as I have expectations for you, you have expectations and goals for what you would like to accomplish as part of this course. The sections below summarize course policy information and our introductory activities. Additionally, the discussion/introduction activity will help you and the other students in the class get acquainted with one another. This lesson must be completed prior to the first official day of classes.

Course Policy Review

Read the syllabus. Please read carefully and note any questions you may have regarding course policies and expectations, schedules, etc. Any questions you have should be sent to your instructor via IUP e-mail. At the completion of this module, you will be asked to commit to course policies.

Introduce Yourself

You will be asked to contribute a short introduction to yourself in the Moodle Forum. Among the items you might want to include are the following:

- Some general information about yourself (name, year in school, home town, etc.).
- What previous math classes you have had (when and where)?
- Have you ever had an online course before (what and when)?
- Your major and career goals.
- Personal interests or hobbies.

NOTE: Do not post personal identification information such as the following:

- Banner ID #
- Social Security #
- Phone numbers
- Specific current address

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Assessment

Commitment to Course Policies

Prior to the first official day of class, you must log into IUP e-mail and complete the Commitment to Course Policies which will be e-mailed to you as an attachment.

The syllabus represents a contract between yourself and the instructor. Your response is not being graded; this is simply a way for you to sign off that you understand the policies set forth in the syllabus and that you agree to follow them. If you have any questions regarding this procedure, please feel free to contact the instructor by IUP e-mail.

Class Introductions

Post to the Class Introduction topic in the Moodle Forum on the DVST 095 course page. Include the following items:

- Some general information about yourself (name, year in school, home town, etc.).
- What previous math classes you have had (when and where)?
- Have you ever had an online course before (what and when)?
- Your major and career goals.
- Personal interests or hobbies.

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Sample E-Mail with Commitment to Course Policies Attachment

Dear DVST 095 student:

Attached is the Commitment to Course Policies document described in the introductory module of the course. This document serves as a statement of your understanding of the course policies and your agreement to adhere to these procedures. Should you have any questions or issues regarding course policies, notify your instructor immediately to have your questions answered to achieve resolution.

If you are ready to commit to the course policies, download the attachment. Place an X next to the statement that indicates whether you do or do not agree to the course policies and then include your name, Banner ID, and date in the appropriate fields at the bottom of the page.

Thank you,

Dr. Parveen Ali

Sample Commitment to Course Policies

Read the Commitment to Course Policies below. Place an X next to the statement that indicates your agreement with this statement. Include your name, Banner ID, and date in the appropriate fields at the bottom of the page.

I understand that the syllabus represents a contract between the professor of this course and myself. I have read the syllabus for DVST 095 and understand my expectations and the course policies, including those regarding grading, course participation, and academic integrity. I also understand that the professor has the right to alter the syllabus as dictated by the needs of the course. By responding to this post, I affirm that I understand the course rules and policies and that I have been given the opportunity to ask questions.

	I understand and COMMIT to abide by the policies set forth in the syllabus and course policies.
	I DO NOT COMMIT to abide by the policies set forth in the syllabus and course policies.
Name: <input style="width: 300px;" type="text"/>	
Banner ID: @	Date: <input style="width: 100px;" type="text"/>

Whole Numbers

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Use the links below to jump to the individual sections of this module:

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Overview

The whole numbers are the counting numbers and 0. The whole numbers are 0, 1, 2, 3, 4, 5, ... We use operations on whole numbers to solve many real-life problems.

For example:

- How much would it cost to take a relaxing vacation?
- What would you have to pay for travel, accommodations, and food?
- Do you have enough money in the bank, or would you need to earn and save more money?

This lesson illustrates how we use operations on whole numbers to solve everyday real-life problems.

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Objectives

At the completion of this unit, the student will

- Solve applied problems involving addition, subtraction, multiplication, and division of whole numbers.
- Write exponential notation for products, such as $4*4*4$.
- Evaluate exponential notation.
- Simplify expressions using the rules for order of operations.
- Find the factors of numbers, prime numbers, and prime factorization of a composite number.

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Lesson Guide

1.5 Solving Word Problems

Word problems can be overwhelming. However, the following method will assist you in better making sense of the problem and choosing a method to approach the problem. Read the problem a few times and answer these two questions:

1. What is the problem asking me? (Usually the answer is at the end of the problem.)
 - ~~2. What is the problem telling me that is useful? (Cross out unwanted information.)~~
-

After answering the above two questions:

1. Define a variable for the unknown.
2. Translate the wording into a numeric equation.
3. Solve the equation.
4. Check your answer.

Example 1:

The Pontiac G6 GT gets 29 miles to the gallon (mpg) in highway driving. How many gallons of gas will it use in 2291 miles of highway driving?

The problem is asking us to find out the amount of gasoline in gallons needed to run 2291 miles on the highway.

The important information that the problem is giving us is that the Pontiac G6 GT gets 29 miles to the gallon on the highway.

Now we can define a variable for the unknown. In this problem, the unknown is the number of gallons. Let g = number of gallons.

Now translate the wording into a numeric equation:

Number of miles per gallon multiplied by the number of gallons is the number of miles that can be driven.

$$29 * g = 2291$$

Solve:

$$29 * g = 2291$$

$$(29 * g)/29 = 2291/29$$

$$g = 2291 \div 29$$

$$g = 79 \text{ gal}$$

Check: to check, we multiply 79 by 29.

$$79 * 29 = 2291$$

State your answer: The Pontiac GT will use 79 gallons of gas.

Example 2:

A bottling company produces 2269 cans of cola. How many 12-can cartons can be filled? How many cans will be left over?

The problem is asking us to find total number of 12-can cartons that can be filled from 2269 cans of cola and the number of leftover cans (less than 12).

The important information is each carton can hold only 12 cans.

The unknown is the number of cartons. Let n = no. of cartons

Translate: The total number of cans divided by the number of cans that can fit within a carton will yield the number of cartons needed.

Additionally, the problem has provided information to let us know that a number of cans will be left over. This problem will, therefore, have a remainder, noted by R below:

$$\begin{aligned}2269 \div 12 &= n \\ \text{Solve : } n &= 2269 \div 12 \\ n &= 189 \text{ R } 1\end{aligned}$$

Check: $12 * 189 + 1 = 2268 + 1 = 2269$
State your answer: 189 cartons with 1 can left over.

1.6 Exponential Notation and Order of Operations

What Is Exponential Notation?

Exponential notation is the repeated multiplication of the same number. It is written as follows:

$$3 * 3 * 3 * 3 * 3 = 3^5$$

In the exponential notation shown above (the part after the equal sign), 3 is called the **base** and 5 is the **exponent**.

Evaluating Exponential Notation

When asked to evaluate exponential notation, you are actually being asked to calculate the whole number represented by the exponent. For example, if asked to evaluate 5^4 .

$$5^4 = 5 * 5 * 5 * 5 = 625$$

Order of Operations

In solving mathematical problems, you will most likely be faced with more than one **operation** (e.g., addition, subtraction, multiplication) to perform. Performing these operations in different orders could potentially give you a false result. The **order of operations** provides you a set order in which to go about solving the problem in order to achieve the correct result.

Rules for order of operations:

1. Do all the operations inside parentheses ().
2. Simplify any number expressions containing exponents.
3. Do multiplication and division as they occur from left to right.
4. Do addition and subtraction as they occur from left to right.

$$\begin{aligned} &\text{Simplify: } 64 \div (8 - 4)^2 * 9 + 52 \\ &= 64 \div 4^2 * 9 + 52 && \text{parentheses} \\ &= 64 \div 16 * 9 + 25 && \text{exponents} \\ &= 4 * 9 + 25 && \text{division} \\ &= 36 + 25 && \text{multiplication} \\ &= 61 && \text{addition} \end{aligned}$$

To assist you in remembering the steps in the order of operations, you can use the following mnemonic:

Please Excuse My Dear Aunt Sally

The phrase should remind you of the order Parentheses, Exponents, Multiplication, Division, Addition, and Subtraction

1.7 Factorizations

Factors of a Number

Factors of a number divide that number evenly (i.e., there is no remainder).

Example 1: Find all factors of 6.

1, 2, 3, and 6 are factors of 6 because they divide 6 evenly

Example 2: Find all factors of 30.

1, 2, 3, 5, 6, 10, 15, and 30

Prime Numbers

A number is **prime** if it has only two factors, 1 and itself.

Example 3: Find all of the factors of 5.

1 and 5. Therefore, 5 is a prime number.

Composite Numbers

If a number is not prime, it is called a **composite number**. A composite number has more than two factors.

Example 4: Find all factors of 6.

1, 2, and 3 are all factors of 6. Therefore, 6 is a composite number.

It should also be noted that the number 1 is neither prime nor composite because it has only 1 factor.

Prime Factorization

You may be asked to generate the **prime factorization** for a number. In prime factorization, a composite number is written as a product of all of its prime factors.

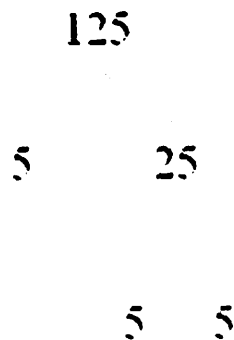
Example 5: Find the prime factorization of 72.

1. Because 72 is even, we divide by the first prime, 2.
 $72 \div 2 = 36, R = 0$
2. Since 36 is composite and even, we again divide again by 2.
 $36 \div 2 = 18, R = 0$
3. Since 18 is composite and even, we again divide again by 2.
 $18 \div 2 = 9, R = 0$
4. Since 9 is composite and odd, we divide by 3.
 $9 \div 3 = 3, R = 0$
5. We bring down all of our divisors and the last quotient which is also a prime number.
 $72 = 2*2*2*3*3$

Another way to find the prime factorization is by using a factor tree as follows.

Find prime factorization of 125.

Begin by determining any factorization you can, and then continue factoring.



Bring down all prime factors and multiply them together. Prime factorization of $125 = 5*5*5$

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Review

Go into the online homework session in CourseCompass and practice all assigned problems. Use the “show me how” button when you get stuck and then complete a problem similar to the problem with which you required assistance.

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Assessment

Homework

This homework is designed to enhance your knowledge of whole numbers. Complete the problems listed for the Whole Numbers topic as outlined in the Course Schedule section of your syllabus. These same problems will be posted in the online homework tool of CourseCompass. You will submit your answers through CourseCompass.

Chapter 1 Quiz

The Chapter 1 Quiz will be available in CourseCompass. This quiz is designed to test your knowledge of the following:

- Solving applied problems involving addition, subtraction, multiplication, and division of whole numbers
- Evaluating exponential notation
- Simplifying expressions using the rules for order of operations
- Finding the factors of numbers, prime numbers, and prime factorization of composite numbers

Forum

This discussion is designed to familiarize you with the different math terminologies introduced in the Whole Numbers module. The purpose of this activity is to increase your math language proficiency. The forum questions will be posted in the Whole Numbers forum, located in the Whole Number content block on the Moodle course page. You are expected to answer the following questions:

- How do you define whole numbers?
- Give an example where you can use whole numbers.
- What are the meanings of prime and composite numbers?
- How do you define prime factorization?

Chapter Reflection Paper

Write a reflection (1 page) about the concepts presented in this module and your experience. The following questions should be addressed:

- What were the goals for the Whole Number module?
 - Why did you need to learn this material?
 - What strategies can you use to accomplish the module goals?
 - What did you like best about this material?
 - What did you find frustrating in this material?
 - What could you do differently to develop these skills?
-

Please save the file in Rich Text Format (.rtf) using your last name, first initial, and the assignment in the file name (e.g., SmithJChapter1Reflection.rtf). Submit this file in the Chapter 1 Reflection assignment in the Whole Numbers content block on the DVST 095 Moodle course page.

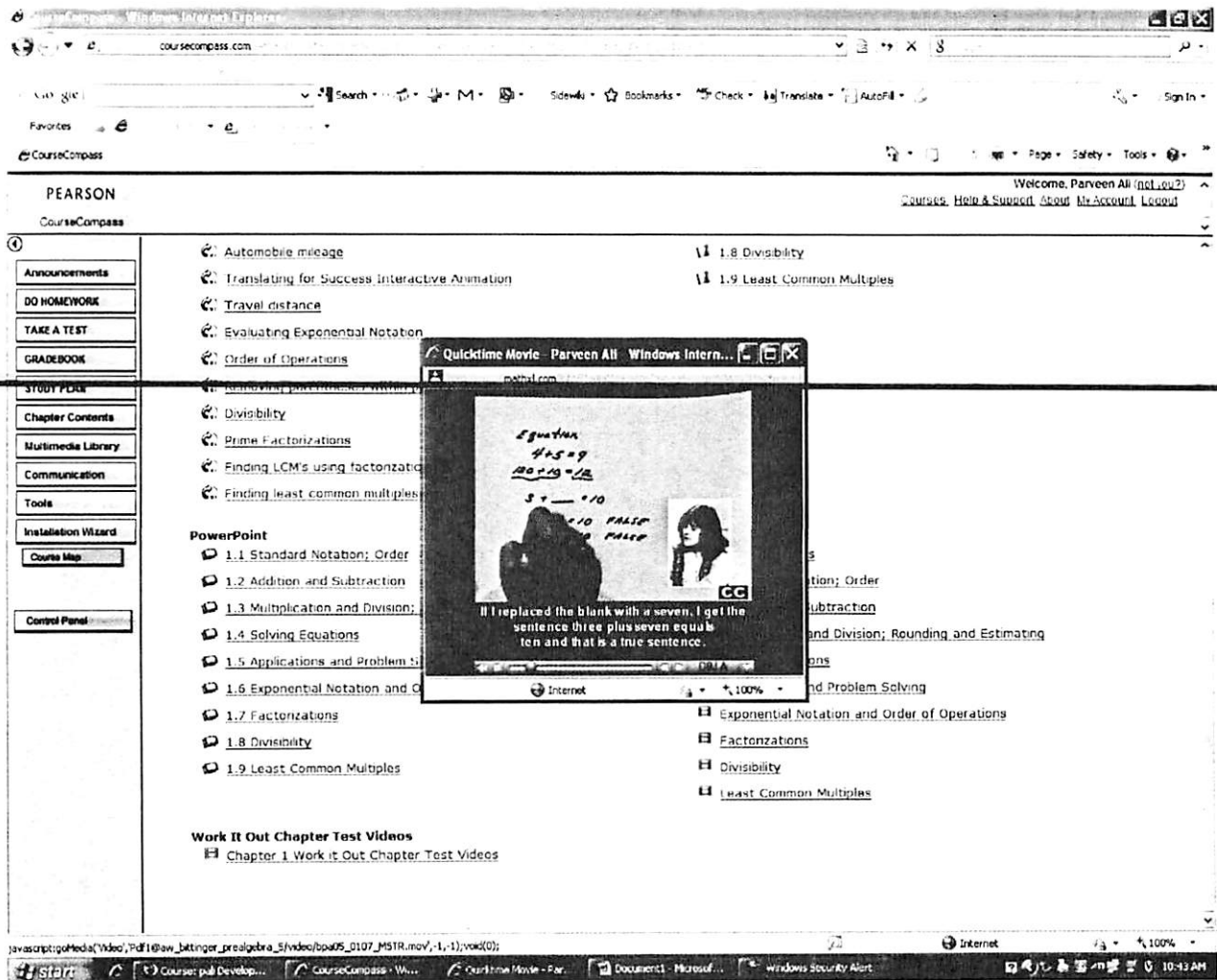
[Top](#)

Screen Captures



<p>People</p> <p>Participants</p> <hr/> <p>Activities</p> <ul style="list-style-type: none"> Assignments Chats Forums Resources <hr/> <p>Search Forums</p> <p>Go</p> <p>Advanced search</p> <hr/> <p>Administration</p> <ul style="list-style-type: none"> Turn editing off Settings Grades Outcomes Groups Backup Restore Import Reports Questions Files Profile <hr/> <p>My courses</p> <ul style="list-style-type: none"> cbennett Development 	<p style="text-align: center;">Topic outline</p> <p>Welcome to DVST 095, Introduction to College Mathematics Online. To get started in this course, please review the materials below. The syllabus will provide you with important information regarding the course. The Brief Introduction to Moodle booklet has been provided to assist you in navigating Moodle.</p> <p>I look forward to working with you this semester.</p> <p>Sincerely,</p> <p>Dr. Ali</p> <ul style="list-style-type: none"> Syllabus (Start Here) A Brief Introduction to Moodle Introduction to DVST 095 Course Compass (External Site) Introductions Forum Announcements Chat Room <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Add a resource... Add an activity... </div> <p>1 Whole Numbers</p> <ul style="list-style-type: none"> Whole Numbers Whole Numbers Chapter 1 Reflection <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Add a resource... Add an activity... </div> <p>2</p> <div style="border: 1px solid black; padding: 2px;"> Add a resource... Add an activity... </div>	<p>Latest News</p> <p>Add a new topic...</p> <p>(No news has been posted yet)</p> <hr/> <p>Upcoming Events</p> <ul style="list-style-type: none"> Final Exams <ul style="list-style-type: none"> 12:00 AM Saturday, 19 December 12:00 AM Chat Room Winter Session Classes Begin <ul style="list-style-type: none"> Monday, 28 December <p>Go to calendar... New Event...</p> <hr/> <p>Recent Activity</p> <p>Activity since Monday, 14 December 2009, 11:08 AM Full report of recent activity.</p> <p>Course updates:</p> <p>Updated Forum: Announcements</p> <p>Added Assignment: Chapter 1 Reflection</p> <p>Added Forum: Whole Numbers</p>
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Screen Capture of the DVST 095 Moodle Course Page



Screen Capture of the Course Compass Website with Closed-Captioned Video Clip

Appendix A: Letters of Support

November 17, 2010

To Whom It May Concern:

I write this letter in support of the proposal to offer DVST 095 both through traditional face-to-face classroom instruction and online. While both the merits and limitations of online instruction can be debated without end, offering DVST 095 online does provide ~~some additional options for Northpointe Campus students.~~

Because of the commuter population and in some cases the minimal number of students needing this developmental course, there are times that students at Northpointe have no access to this course. Students needing developmental math can be forced to postpone progress in completing math requirements until they transfer to the main campus. An online section permits just a small number of students at Northpointe to have access to this course.

While the instruction of the course is online, it is not without face-to-face assistance and support. IUP does provide math tutoring on the Northpointe Campus. This service, in addition to the digital assistance of the professor, can provide a solid foundation to further develop math skills.

I understand that an online math class may not be for everyone. For some students who are taking coursework off campus or who have difficult schedules outside of college, an online section may be the only option between future success and failure.

Sincerely,

Richard Muth
Interim Director

From: Carmy Carranza <CARMYCGC@iup.edu>
Subject: Fwd: Re: DVST 095
Date: Wed, 01 Dec 2010 09:22:29 -0500
To: p.j.ali@iup.edu, "Porter, D B" <D.B.Porter@iup.edu>, Paul Hrabovsky <paulhrab@iup.edu>



fyi

----- Original Message -----

Subject: ~~Re: DVST 095~~
Date: Wed, 1 Dec 2010 09:15:56 -0500
From: Richard Muth <RMUTH@iup.edu>
To: Dr. Carmy Carranza <carmycgc@iup.edu>

Dr. Carranza,

I will grant permission to students at Northpointe to take DVST 095 online if the student wants to take the course in this type of delivery. I lean to extend blanket approval to students at Northpointe to take an online class in a subject matter not available face-to-face at Northpointe. If high school students can be approved routinely to take online courses as part of dual enrollment then Northpointe students should be able to also do it if they want.

Rich

Richard Muth
Interim Director
IUP at Northpointe
724.294.3300
richard.muth@iup.edu
www.iup.edu/northpointe

Appendix B: References for Online Developmental Courses

Broderick, B., & Caverly, D. C. (1997). Websites for developmental students. *Journal of Developmental Education*, 21(1), 38-39. This article describes various websites to develop learning skills for developmental students.

Brothen, T (1994) A computer-assisted exercise that increases self-regulated studying. *Journal of Developmental Education*, 18(2), 18-21. This article demonstrates that computer assisted practice for final exams provides feedbacks on underlying concepts that are associated with improved learning and higher scores on final exams.

Carpenter, T. G., Brown, W. L., & Hickman, R. C. (2004). Influences of online delivery on developmental writing outcomes. *Journal of Developmental Education*, 28(1), 14-18. This study suggests that the online delivery for developmental writing leads to a higher mean score for students who completed the course online compared to those in traditional classrooms. However, the withdrawal rate is higher for online students than traditional classroom students.

MacDonald, L., & Caverly, D. (1997). Distance education and developmental educators. *Journal of Developmental Education*, 21(2), 36-37. This article describes various types of distance educations offered by different community colleges and universities.

Paterson, C. L., & Caverly, D. C. (2005). Building academic literacy through online discussion forums. *Journal of Developmental Studies*, Winter, 38-39. This article suggests that in online discussion forums, the connections of learner and guide (the instructor or another student) are recorded and can, therefore, be monitored more easily than in face-to-face classrooms. Students can develop their concepts by preparing a peer review that they must deliver to their forum.

Suel, P. (2005). Building a virtual high school...click by click. *The Journal*, 33(2). This article focuses on the effects of online learning on the students of South Dakota's alternate high school. This school helps students who hope to graduate early or who are trying to catch up with their peers. The online education provided a new opportunity for these learners who needed the flexibility in scheduling.

~~Wadsworth, L. M., Husman, J., Duggan, M. A., & Pennington, M. N. (2007). Online~~

~~mathematics achievement: Effects of learning strategies and self-efficacy. *Journal of Developmental Studies*, 30 (3), 6-14. Research demonstrates that a students' self-efficacy is influenced by the feedback they receive and attribution they make regarding the feedback. In online classrooms, students encounter many feedback tools to help regulate their progress. This study indicates that motivation, concentration, information processing, and self-testing of online classes influence the grade achievement.~~

Willard, H., Weinstein, C.E., Boylan, H. R., & Saxon, D. P. (2010). The future is now: A research agenda for developmental education in the 21st century. *Research in Developmental Education*, 23(4), 1-4. This study suggests that results from online developmental courses were at least equal to, and in some cases better than face to-face courses in terms of students' success and retention. Moreover, this study indicates that the U.S. Department of Education's recent report (2009) supported online instruction for developmental students.

Appendix C: Survey of Pennsylvania Community Colleges

In response to feedback from the IUP University-Wide Undergraduate Curriculum Committee, we set out to gather data regarding the prevalence of online developmental mathematics courses state-wide. We used a mixed methods approach to determine quantitatively the percentage of schools offering developmental mathematics online and a qualitatively the entry criteria, course methodologies, and the rationale for offering the course online.

Methodology

For the purposes of data collection, we focused on community colleges in Pennsylvania. ~~Using each community college's website and the online course catalog, we were able to identify those community colleges offering online developmental mathematics courses, as well as the instructors of those courses. Based on the results of this survey of online course catalogs, the percentage of community colleges offering online developmental mathematics courses was identified.~~

To further elaborate on the aspects and rationale of these online courses, we gathered qualitative data. The instructors of the online courses were presented with a set of questions via the e-mail addresses identified in the survey of online course catalogs. These questions are as follows:

1. How effective are online courses for developmental students?
2. What is the methodology involved in delivering developmental math courses online?
3. How instructor-student and student-student interaction take place?

Responses were returned via e-mail.

Results

The results of the survey of community college online course catalogs and the instructor responses to the qualitative questions are as follows:

Survey of Course Catalogs

A review of the online course catalogs of Pennsylvania community colleges revealed that 11 of the 14 ($\approx 79\%$) community colleges offered a developmental mathematics course online. Additionally, in conducting the research, we discovered that one of our PASSHE sister schools (Kutztown University) also offers developmental mathematics (MATH 017: Introduction to Math) online.

Responses to Qualitative Questions

In surveying the community college online course catalogs, we were able to identify the instructors for the online developmental math courses. In all there were 23 instructors teaching developmental mathematics online (some instructors teaching multiple courses). Instructors were e-mailed a 3-question qualitative survey. Four of the instructors responded to the survey questions. The results of the responses can be summarized as follows:

Effectiveness of Online Courses for Developmental Students

- One instructor described online delivery as “very effective for teaching basic math skills.”

- Another instructor stated that, “our passing rate in online developmental classes is a bit higher than in seated ones. Retention rate seems better also.”
- “Many students in my online classes are returning adults, and they do very well.”

Delivery Methodology in Online Developmental Math Courses

- All of the respondents used Pearson’s MyMathLab or similar publisher-created resources.
 - Users of MyMathLab cited the programs ability to provide students with practice questions and procedural help as one of the advantages of the program.
 - Instructors also cited the role of the instructor as facilitator and provider of additional help for those students who need it.
-

Interaction Methods

- Generally instructors cited e-mail as the method of contact, though telephone, Skype, and face-to-face contact were mentioned.
- The instructor who mentioned Skype stated that her students seemed reluctant to use this interaction method.