MAP2302-4689(16321) - Elem Diff Equations

This course is a synchronous class, with live zoom meetings MWF 4th period (1040-1130). It carries 3 credits and entails 3 contact hours. Prerequisites: Any of MAC 2312, MAC 2512, and MAC 3473 or an equivalent.

Text: *Fundamental of Differential Equations and Boundary Value Problems,* 7th edition by Nagle, Saff and Snider with MyMathLab. Should be purchased through UFALLACCESS in order to guarantee compatibility with Canvas.

Video Lectures: Linked below. You will be expected to watch these and attempt the homework before class.

Course Description and Objectives:

Differential Equations are ubiquitous in the sciences and engineering. This course is designed to serve students in engineering, physics, mathematics and related disciplines with the aim of understanding qualitatively, applying, and solving ordinary differential equations of the most usual types.

The course starts with an introduction to the concept of differential equations. It covers first order methods, including separability, exactness, integrating factors, first order linear equations, Bernoulli's equations, and second order equations reducible to first order ones.

The course continues with higher order methods for constant coefficient linear equations including particular solutions by the method of annihilators and undetermined coefficients, as well as the theory of linear ordinary differential equations.

The course also covers Laplace transform methods, including properties of the Laplace transform and solution of initial value problems via the Laplace transform. Series solutions will be covered as time permits.

Some applications, from such areas as mechanics and electrical circuits, may be covered.

Course Learning Goals:

- Recognize and solve common first order differential equations.
- Understand the qualitative nature of the solutions of first order equations.
- Understand the theory of linear differential equations.
- Recognize and solve higher order linear constant coefficient (linear) differential equations.
- Gain fluency in the use of the Laplace Transform.

Course Flow:

- Tentatively, we will cover Sections 1.1-1.4; 2.2-2.6; 4.2-4.4; 6.1-6.3; and 7.2-7.9 in the text.

- After completing a section, you will be expected to work on the corresponding suggested problems.
- For most of these sections in the text there are corresponding video lectures from UF Online (UFO) to watch in advance of our zoom meetings. There are some sections in the text that will be covered entirely in class.
- Typically, during our zoom meetings, we will discuss the homework, review and expand upon the material covered in the video lectures and discuss additional examples.
- Course grades will be based upon homework, (20%) two midterms, (20% each) two group projects, (10% each) and a final. (20%) The homework and midterms will be delivered asynchronously using MyMathLab, giving you some amount of flexibility. Late assignments may not be tolerated. The final will also be given over MyMathLab, possibly with additional written component due during the scheduled final time. The primary objective in assessment is to judge mastery.
- The two group projects will involve semi-randomly assigned teams. The first will involve collaborating to create a written document about a specific problem. The second will be to generate a presentation. You will be graded as a group, but will be constructively reviewed by your peers and group members.

Office Hour: Period 5 Monday or by appointment. Will leave Zoom meeting open after class.

Communications: Per university policy, written communication, especially anything involving course work and grades, should be through canvas. Office hours, whether scheduled or ad hoc, will be conducted via zoom.

Grades. Grading in this class is consistent with UF policies available at: **https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/ (https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/)**

Grades will be assigned according to the following scale with the percentage score obtained by averaging the four exams scores.

Letter Grade	Range:	
A	100 %	to 90.0%
A-	< 90.0 %	to 97.0%
B+	< 87.0 %	to 84.0%
B	< 84.0 %	to 80.0%
B-	< 80.0 %	to 77.0%
C+	< 77.0 %	to 74.0%
C	< 74.0 %	to 67.0%
D+	< 67.0 %	to 64.0%
D	< 64.0 %	to 60.0%
F	< 60.0 %	to 0.0%

This course is aligned with the UF policies below.

- Contact Hours: "Contact Hours" refers to the hours per week in which students are in contact with the instructor, excluding office hours or other voluntary contact. The number of contact hours in this course equals the number of credits the course offers.

- Workload: As a Carnegie I, research-intensive university, UF is required by federal law to assign at least 2 hours of work outside of class for every contact hour. Work done in these hours may include reading/viewing assigned material and doing explicitly assigned individual or group work, as well as reviewing notes from class, synthesizing information in advance of exams or papers, and other self-determined study tasks.

- Accommodation for Student with Disabilities: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. This class supports the needs of different learners; it is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

- Statement Regarding Evaluations: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available from **the Gatorevals website (https://gatorevals.aa.ufl.edu/students/)** . Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via **the evaluation system. (https://ufl.bluera.com/ufl/so-eng.htm)** Summaries of course evaluation results are available to students at the **public results website (https://gatorevals.aa.ufl.edu/public-results/)** .

- Statement Regarding Course Recording: Our class sessions may be audio visually recorded for students in the class to refer back to and for use of enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, keep your camera off and do not use a profile image. Likewise, students who unmute during class and participate verbally are agreeing to have their voices recorded. If you are unwilling to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

- Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. **Click here to read the university attendance policies (https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/)** .

YOUR INTEGRITY IS PARAMOUNT:

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and

integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

DIVERSITY IS STRENGTH

The Mathematics Department is committed to diversity and inclusion of all students. We acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements It is our intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

Transgressions of others identity will not be tolerated. Specifically, I expect group work to be conducted professionally.

UFO map2302 lectures

L1

Introduction to Differential Equations: Motivating Examples (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/a4d331a951924d079221b7aaf0ad80581d) [11:39] |

Introduction: Basic Definitions (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/eab14779fd8a42c4aa8033f2c112e8751d) [10:31]

L2:

Solutions and Initial Value Problems: Solutions to DEs (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/f8ae4d853ad34aa1a3c40fe0c4426b171d) [16:05]

Solutions and IVPs: Initial Value Problems (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/a2b390bf910c47289cfe9337394ea6cd1d) [12:26] |

  The Existence and Uniqueness Theorem for IVPs (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/31334ea73d854f7882a0df28a3d0e35a1d) [4:34]

L3:

Direction Fields: What is a Direction Field? (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/74d91935e5e0457ca62732fce5b206d61d) [6:46] |

Direction Fields: Autonomous Differential Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/a60a8a108d0749acabceb486b3ecfd191d) [9:28] |

Direction Fields: The Method of Isoclines (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/ccdac1cbe0284e0580038a401d3a28bf1d) [4:07] |

L4:

What is Euler's Method? (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/39eeb9746d334c6eba260afd2055ecc41d) [7:12] |

The Approximation Method of Euler: Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/9a76335d81ff471582459006b9c538641d) [9:39]|

L5:

Method for Solving Separable Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/68259c3994644822882b242b635d1d821d) [15:00] |

Separable Equations: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/f88996d396d741a3b8f260970f25c6251d) [23:27] |

L6:

Linear Equations Method for Solving Linear Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/cc39113adffd484fb913a5ac57d68a921d) [13:48] |

Linear Equations: Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/7c15faae9ebc48f19d8f48c8a2bfbe361d) [8:29] |

Linear Equations: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/2ca6f8b5590c475688b33a51622862421d) [11:14] |

L7:

Exact Equations: Test for Exactness (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/3272df0540dd4bceaa317ec7da25c0cc1d) [13:15] |

Exact Equations: Method for Solving Exact Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/42bcdb0a272e445b9b7fe522b419964d1d) [9:39] |

Exact Equations: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/839fe828de9c4beeac6444da8c0508311d) [7:29] |

L8:

Special Integrating Factors: Integrating Factors (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/09757703c29e4eca8dd9e55a68d375da1d) [8:39] |

Special Integrating Factors: Method for Finding Integrating Factors (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/bb2d3c1d95274ac982abba2deb5b591a1d) [22:22] |

Special Integrating Factors: Summary (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/7d4518a815234959a7f2fb081a9279621d) [7:54] |

L9:

Substitutions and Transformations: Homogeneous Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/8a68ff9d19a04e6db9029e3d2d3f221e1d) [10:11] |

Substitutions and Transformations: Bernoulli Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/0ccd9dac653545a6841227ed8a71275a1d) [13:07] |

Substitutions and Transformations: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/7da2a6deadc84042b7d58220b4d823811d) [9:23] |

L10:

1st Order Applications: Orthogonal Trajectories (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/930fc31baaf54c129704d2d1dde510501d) [7:25] |

1st Order Applications: Exponential Growth and Decay and the Logistic Model (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/83c97ebcb5af4400bef0823c77c7c3f81d) [7:48] |

1st Order Applications: Heat Transfer (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/69d09c3182b64cc79069eee83e235e271d) [11:16] |

1st Order Applications: Electrical Circuits (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/c7b64b318def47d1beefd5b4f9fbd21e1d) [11:48] |

L11:

Simple Harmonic Motion: The Mass-Spring System (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/c5cee7322c224d65a2b663c6d7599f2d1d) [11:20] |

Simple Harmonic Motion: Overdamped and Underdamped Systems (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/0307c88f01e04119b3e25e30d9b6d4201d) [11:52] |

Simple Harmonic Motion: External Forces (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/e4054588243a4b51986576c39d5804891d) [10:18] |

Simple Harmonic Motion: Beats, Resonance, and other Applications (Links to an external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/8f0d0bf278d449a699284b776bc3312d1d) [5:56] |

L12:

**Homogeneous Linear Equations: The Auxiliary Equation (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/2524841a704b47eda4df1ec3f757fceb1d)** [5:18] |

**Homogeneous Linear Equations: Linearly Independent Solutions (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/b6385f082fd744ab9b499edb598cd4971d)** [9:02] |

**Homogeneous Linear Equations: Method for Finding Linearly Independent Solutions (Links to an
external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/39739a5c0d7c4bf8bc705036639db7991d)**
[9:08] |

**Homogeneous Linear Equations: The General Solution (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/d6e30e8c81a04996b9967bd1315016b61d)** [8:26] |

L13:

**Auxiliary Equations with Complex Roots: Euler's Formula (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/8a811ce202754c8da0369d2c3bd25d141d)** [23:20] |

**Auxiliary Equations with Complex Roots: The General Solution (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/bf0316d10c9c44efba1e3c1c688d52d31d)** [9:21] |

**Auxiliary Equations with Complex Roots: Connection to Mass-Spring Oscillators (Links to an
external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/6fbd8c36c3d34dffa5d65c235e88685b1d)**
[11:45] |

L14:

**The Method of Undetermined Coefficients: Judicious Guessing (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/15de7c4c95654c46906a34bd279d9a061d)** [15:30] |

**The Method of Undetermined Coefficients: Trouble from Homogeneous Solutions (Links to an
external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/a83edcc17c4345fa83f80e89becafd001d)**
[13:46] |

**The Method of Undetermined Coefficients: Undetermined Coefficients Summary (Links to an
external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/abe42399af784c3f97b8110ea097a9891d)**
[11:23] |

9/1/2020   MAP2302-4689(16321) - Elem Diff Equations

L15:

The Superposition Principle (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/5d0734aa60594fa782e1b2da85a852411d) [8:56]

Streamlined Undetermined Coefficients (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/50d727da32f7401aacfb44cd189555e91d) [14:43] |

The General Solution (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/ad7d8bad81d143a4a1a0f723378627df1d) [16:12] |

L16:

Variation of Parameters: A New Method for Nonhomogeneous DEs (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/2956a36d44a94d37b50f4da1cf9e33c81d) [24:39]
| **Transcript**

Variation of Parameters: Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/7715ec91b6d54468aa68a92389d10f091d) [5:03] |

L17:

The Standard Form and Linear Independence Revisited (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/346061a190f044dd9fb909252791c2d91d) [10:36] | Transcript

Variation of Parameters for Variable Coefficient Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/b4b83c045ec94dad821c42356d68b9631d) [16:51] |
Transcript

Cauchy-Euler Equations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/092639bc797a4e1689f850cc4fcc365c1d) [19:15]
| **Transcript**

Reduction of Order (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/d8017b2ff4254fb48b7b5d0318f313b81d) [15:47] | **Transcript**

Existence and Uniqueness of Solutions (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/fa40e36e437c432dbde02ca27cb25af01d) [4:51] | **Transcript**

L18:

Pre-Lecture: Review of Improper Integrals (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/09ced28c210248d4984541c98d65b1271d) [9:50] |

The Laplace Transform: The Definition and Examples (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/8bf5d26316d640cda8dad006c1c135c91d) [10:01] |

The Laplace Transform: More Examples (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/eb5e149e10964be08b73f8bd0d4b2bb01d) [11:29] |

Transforms of Piecewise Continuous Functions (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/0c3dec1c49084a62877b289a1b5037e91d) [12:59]

Linearity (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/695baa0f217a401d916b63fbd28e7bd81d) [4:47] |

The existence and Uniqueness Theorem (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/10eef9bb95e843fbbdf400464e0802f51d) [12:59]|

L19:

Properties of the Laplace Transform: The Shifting Property (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/53b8ad89b3f94c91960b191aaeac24041d) [11:25] |

The Laplace Transform of the Derivative (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/cb30f632900443f7928a48d132d009c01d) [16:07] |

The Derivative of the Laplace Transform (Links to an external site.)

(https://mediasite.video.ufl.edu/Mediasite/Play/fda98378ffa3499daf7657a5d6959c581d) [9:12] |

L20:

Pre-Lecture: Review of Partial Fraction Decomposition (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/2287fba627414ea1bcfbe8ba7115d6f51d) [9:29] |

The Inverse Laplace Transform: The Definition (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/49acf40c393645be81b98a66a30f37af1d) [9:30] |

The Inverse Laplace Transform: Linearity Property (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/7085136d34a9435ea681aeffabba55581d) [8:34] |

Determining the Inverse Transform using Partial Fractions (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/052ae526d1ca44d88b4ab84653a7551a1d) [15:00] |

The Inverse Laplace Transform: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/97becfc5890d4e23bbc507450b0c796b1d) [18:08] |

L21:

Solving Initial Value Problems using Laplace Transforms: The Algorithm (Links to an external
site.) (https://mediasite.video.ufl.edu/Mediasite/Play/239948aea25e4e0e814030cd98455ed51d) [21:03] |

Solving Initial Value Problems using Laplace Transforms: More Examples (Links to an external
site.) (https://mediasite.video.ufl.edu/Mediasite/Play/40d4c408777e4b8e813c617a059b6d6f1d) [7:41] |

Solving Variable Coefficients IVPs with Laplace Transforms (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/59d942272084494db1dddbafa856c5041d) [18:00] |

L22:

Transforms of Discontinuous Functions: Step and Rectangular Window Functions (Links to an
external site.) (https://mediasite.video.ufl.edu/Mediasite/Play/b026681d76a4441cb996c8d98c61e0ab1d)
[14:48] |

Transforms of Discontinuous Functions: Translation in t (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/82cde6ae7ef4499a9919f3a509a557d31d) [18:37] |

Transforms of Discontinuous Functions: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/2ab4c48bcaaf4c0598b1d8464faaf5f21d) [13:29] |

L23:

Convolution: Definition and Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/407f34e1c7c1493eb8a85e591beddbe01d) [13:36] |

Convolution: Properties (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/942815583e104fb19b3781734ad139d91d) [17:56] |

Convolution: Solving DEs using Convolution (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/7815ac6beb794cc684b6b9acd8c0a7381d) [10:52] |

Convolution: The Volterra Integral Equation (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/83ae823592e6429aafede968e78fd1e41d) [5:36] |

Convolution: Impulse Response and the Transfer Function (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/4de0016d1efc435ba6e8c16135918e561d) [15:52] |

L24:

The Dirac Delta Function: Definition and Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/a104abf7100b4f3e88c941c11b8b8f3c1d) [16:23] |

The Dirac Delta Function: Solving IVPs (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/8dadae8fc79b4834ac48a00f009cdcdd1d) [21:42] |

L25:

Review of Taylor Polynomials (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/efbd776ad0db41c2b038f53df38f017d1d) [6:31] |

Solving Initial Value Problems with Taylor Polynomials (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/3d5b85213c1e4edc9909d4caa05e67481d) [14:08] |

L26:

Review of Power Series (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/af3960d4bf934c28a4b603788fde6c3f1d) [9:44] |

Shifting the Summation Index (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/81dfe6f823934cce8b1c345be74cec9c1d) [9:30] |

Power Series Vanishing on an Interval and Recurrence Relations (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/5b63c02fa5a249b48927390acef7226c1d) [16:21] |

Differentiation of Power Series (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/17ccd40731c14f91a2d74d8cc05f4c051d) [7:51] |

Analytic Functions (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/ec11a13c4c7e45e2a9103b074266fd091d) [8.51] |

L27

Ordinary and Singular Points (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/548536c325d5405f8fe77c91b30f4c701d) [6:18] |

Power Series Method about an Ordinary Point (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/95874ca0595e4291b31b383780c063df1d) [9:06] |

Series Solutions to Linear DEs: Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/df6c28b377404b028ef2222088fb5d3a1d) [11:44] |

Series Solutions to Linear DEs: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/f2c1f3e0330e4547ba5f8baf12916f2d1d) [8:03] |

L28:

Equations with Analytic Coefficients: Existence of Analytic Solutions (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/bd91ebb8c31a4e999a41e6fa478a392c1d) [10:23] |

Equations with Analytic Coefficients: More Examples (Links to an external site.)
(https://mediasite.video.ufl.edu/Mediasite/Play/bc64009eef514eae88fd516a275823961d) [12:39] |

Additional UF Policies and Resources

× University Police

× Career Connections Center

× Counseling and Wellness Center

× Dean of Students Office

× Disability Resource Center

× Multicultural and Diversity Affairs

× Office of Student Veteran Services

× ONE.UF

× Official Sources of Rules and Regulations