Syllabus: Systems Analysis and Design (BCIS 350/540)

Instructor Information

Dr. Jennifer Kreie

- Email: Use the LMS email system during this course.
  Office phone: 575.646.2990
- Online office hours: https://nmsu.adobeconnect.com/kreie_office/
- Office: Guthrie 318
  Request appointment (online or face-to-face): http://meetme.so/jkreie

Use the "Instructor Information" on the course homepage to find more details about my schedule and how to contact me.

My goal as teacher: My goal in this class is to help you develop a set of skills you would use as a systems analyst and show you some of the techniques and software a systems analyst may use on the job. In this course you can immediately apply a lot of what you learn through hands-on exercises and projects. In the final project of this course you'll have a working prototype of a database and Web application that demonstrates what you can do with your newly acquired systems analyst "toolkit."

Course Information and Course Delivery Method

Systems Analysis and Design - Fall 2014
Log in to Canvas at http://learn.nmsu.edu using your NMSU username and password.

All course material will be delivered through the LMS (Canvas is our current Learning Management Systems). The modules section will deliver most of the contents of this course. Each learning module will have links to handouts, Web pages, and videos, as well as related quizzes and assignments. The course homepage also has links to other components of the course, such as the syllabus, schedule, and resources.

Please be aware that Canvas is not fully compatible with mobile devices. Many components will work well in mobile devices but not necessarily all. The design of the course assumes you have access to a computer (desktop or laptop) for completing the work in this course.
The course material was developed using a variety of software programs in either a Windows operating system or Web tools. Mac owners will need to handle any issues they encounter due to Mac-to-PC interaction or use the Windows-based computers available on campus.

**Online students: Important information about exams!** When this course is taught online the two exams in this course must be proctored. Students within 75 miles of campus must take their exams at the NMSU main campus. Those further than 75 miles from campus must find and register their own proctors no later than one week prior to each exam. Here are links to the instructions for arranging a proctor and the proctor form.

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**Course Description**

This course covers the systems development life cycle and some of the techniques and software used in this cycle. The life cycle will be related to traditional and newer methodologies, such as the waterfall method, RAD (Rapid Application Development), Scrum, and eXtreme Programming. There is an emphasis on project management and formal techniques for doing analysis, design, and implementation. The techniques covered include requirements gathering, data modeling, process modeling, and prototyping. This course also provides hands-on work with CASE tools (Computer-Aided Software Engineering) that are useful throughout the life cycle.

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**Course Goals**

The student who completes this course will be able to:

- Describe the foundations of systems development, the life cycle and some methodologies for working through the life cycle.
- Explain project management steps and techniques for the planning phase of the systems development life cycle.
- Apply ways to gather information about requirements using traditional methods and prototyping.
- Depict system and user requirements using data and process modeling techniques.
- Apply relational database terminology and illustrate design concepts.
- Create a prototype information system using an SDLC methodology and a CASE tool (computer-aided software engineering).

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**Textbook & Required Materials**
A textbook will not be used for this course but there are required readings. There are handouts written by the instructor and readings from related web sites. There are also required videos, some by the instructor and others available on the Internet.

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**Preferred Modes of Communication**

For general questions about the course or about a particular assignment, please post in the Discussion section so everyone can benefit from the questions and answers. For any email communications about this course, please use the email system within the LMS.

I will use the Announcement tool in Canvas to post alerts and current information about this course. Check Announcements whenever you log into this course.

If you want, you can set your New Announcements in Notifications to "Right Away" to ensure that you receive any announcements. (Go to **Profile > Notifications**, find for new announcements and set to **Right Away**).

**Virtual Office Hours.** All time-related information is stated in Mountain Standard Time. I have face-to-face office hours and virtual office hours ([Instructor Information](#) page). During my online office hours, students are also welcome to come by my office but priority will be given to students connected online. (If you haven’t used Adobe Connect before, the first time you will be prompted to install a plug-in for your browser.)

You can schedule an appointment, rather than just dropping by online or face-to-face, by using the link for appointments on the "Instructor Information" page. Please note that there are some times listed when I am potentially available but that are not part of my scheduled office hours. These are times when I’m often working in my office and I might be available. When you make a request through MeetMe, I’ll confirm whether or not I can meet that requested time.

**Email.** Use the email system in the LMS for communications related to this specific course. I will respond within 24 hours except over the weekends when the response time may be up to 48 hours. Please don’t hesitate to contact me again if I haven’t responded. (For example, if you send two separate emails in the LMS within a short time the first message maybe overlooked. Feel free to point this out to me. I will appreciate it.)

Please be advised that due to privacy and security concerns, I am unable to respond to emails from or about students that do not originate from within Canvas or an official NMSU email address

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**Prerequisites**
The prerequisite for this course is BCIS 222 (or it can be taken concurrently). There are other comparable introduction to programming courses that can meet this requirement and are contingent on instructor approval. The purpose of the prerequisite is to ensure students have an understanding of programming fundamentals, not knowledge of a particular programming language.

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**Coursework - Online or Face-to-Face**

Whether you are taking this course online or face-to-face, you are expected to log in to this course at least 3 times a week in order to keep up with the pace of the course and to keep up with any announcements or emails.

You need to set aside time to complete the assigned coursework—readings, exercises, quizzes, etc. These cannot be done at the last minute. Expect to spend an average of 4 to 5 hours per week on this class during the first half of the semester and 5 to 6 hours per week during the last half of the semester. For students in a face-to-face section, some of this required time occurs during class time. For online students, you must have the discipline to spend the required time to do the coursework.

- Are you ready for the demands of an online class? Here's a short self evaluation you can do, that might be helpful: [http://distance.nmsu.edu/prospective/self_eval_dl.html](http://distance.nmsu.edu/prospective/self_eval_dl.html)

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**Required Technical Skills**

An online course requires a number of technical skills as well as other soft skills. At a minimum you need to meet certain technology responsibilities to complete work for this course. If you have questions about technical requirements for the course, please contact me immediately.

To begin in this course, you must:

- Read this syllabus carefully and contact me immediately if you have any questions. You are responsible for the content and assignments in this syllabus.
- Be able to obtain access to an Internet connection, preferably broadband, and a working computer for the duration of this course.
- If you haven't used Adobe Connect before, the first time you will be prompted to install a plug-in for your browser. You must be able to add that plug-in when prompted.
- Be proficient with Microsoft© Word and comfortable using Excel.
- Be able to send and receive emails and email attachments using the NMSU LMS (learning management system), which currently is Canvas.
- Be able to use your NMSU email address. (This is used once at the beginning of the class to notify you of the link to some Microsoft software you have the option of downloading.)
• Know how to change your Canvas Notification settings.
• Maintain backups of all work you create for this course.
• Be familiar with many computer features, such as locating files on the computer hard drive, using browsers (Chrome, Firefox, and others) and comfortable with learning new software.
• Be able to deal with Mac-to-PC issues if you own a MAC. Some support may be available through ICT here at NMSU but the instructor will not provide technical support.

You do not need to know Oracle SQL Data Modeler, APEX or Microsoft Project. These will be taught in this course.

Course Organization

This course is organized by units or modules. Each module has readings, videos and activities (activities include at least one quiz or assignment but may have several). The things you do in the last half of the class build on the knowledge and skills you've acquired during the first half of the class so it is essential that you spend the time necessary to complete the activities (readings, videos, assignments, and quizzes) for each learning objective within each module.

• Getting started
• Foundations of systems development
• Planning and project management
• Analysis
  o Gathering requirements
  o Process modeling
  o Data modeling
• Analysis and design with prototyping (first project)
• Work as a systems analyst (second project)
• Work as a systems analyst & project manager (third project)

Assignments

Individual assignments and quizzes must be completed on your own (see the scholastic dishonesty section below). It is OK to discuss assignments with others in the course, in face, I encourage discussions with other students, but do your own work. It is important that you practice and master the techniques being taught. Most of these will be used throughout the semester so you learn the techniques, practice them and later in the projects you can see how to apply them in the systems development life cycle.
Projects

You will apply what you learn in this course. Approximately the first 8 weeks of the semester you learn terms, concepts, techniques and how to use some software. The remainder of the semester has 3 projects.

- **First project.** This is a tutorial that introduces Oracle APEX, as CASE tool, that is used for prototyping and rapid application development. Using APEX, you take a data model that is provided and create a database and a Web application that uses the database. There are detailed instructions and videos for this tutorial project. Time allotted: Approximately 2 weeks.

- **Second project.** In this project you step into a scenario where you are the a systems analyst who takes over in a project that already has much of the documentation and planning already completed. You will use Oracle Data Modeler and APEX to build a database and prototype Web application. All the material and exercises up to this point in the class help prepare you for this project. There are some instructions for you but sometimes you will have to apply what you have learned throughout the semester and decide what to do. Time allotted: Approximately 2 weeks.

- **Final project.** You now apply everything you learned up to this point. You have a request for a new information system (database and Web application) and you develop the documentation, project plan, and models needed. You build a working prototype of the Web application use Oracle APEX. At the end of this project you create a technical video and an application that explain how you designed and built the database and how the Web application works. (These videos give you something you can take away from this class and use in job interviews or in a professional portfolio.) Time allotted: Approximately 3 weeks.

Please note that the time allotted for this projects provides ample time to complete the work but work must begin immediately and progress regularly over the time period. None of these projects can be done at the last minute (or even in the last couple of days). When a project starts you must begin your work right off so you have time to ask questions and get assistance, as needed.

Graduate students: Graduate students will complete one additional assignment for this course, which is a technical video that explains the design of one of the final project's reports and forms in the Web application.

Course or Institutional Policies

**Grading Policy.** The grading is weighted for different types of work and the percentages are shown below.

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Exam 1  |  15%
---|---
Exam 2  |  15%
Quizzes (9)  |  10%
Assignments (10 to 12)  |  15%
1st Project (tutorial)  |  10%
2nd Project  |  15%
Final Project (including video)  |  20%
**Total**  |  **100%**

The exams are a combination of several multiple choice questions, a few fill in the blank, and a few hands-on problems.

I will give you feedback/grade on assignments within 7 days of the due date. If I cannot meet this turn-around time, I'll post information about the delay.

Grades will be assigned as follows:
- 98% through 100%: A+
- 92% through 97.9%: A
- 90% through 91.9%: A-
- 88% through 89.9%: B+
- 82% through 87.9%: B
- 80% through 81.9%: B-
- 78% through 79.9%: C+
- 72% through 77.9%: C
- 70% through 71.9%: C-
- 60% through 69.9%: D
- below 60%: F

**Late Work**

- Online quizzes are **not** accepted late.
- Some assignments will be accepted within 24 hours of the due date. There will be a 20% late penalty. Beyond 24 hours after the due date, assignments are not accepted.
- Some assignments will not be accepted late and the assignment information online will indicate this.

**Incomplete Grades.** The grade of "I" may only be assigned if the student is unable to complete the course due to circumstances beyond the student's control that develop after the last day to withdraw from the course.

**Class Withdrawals.** It is your responsibility to know important dates such as the final day to withdraw from classes. You must officially withdraw from any class that you intend to drop.
Course Schedule

A separate document provides a weekly outline of the course schedule. There is a link to this from the course homepage.

Netiquette

Here are some guidelines for working with others in an online course. Here is a link to an overview of these guidelines.

Academic Integrity

The Student Code of Conduct defines academic misconduct, non-academic misconduct and the consequences or penalties for each. The Student Code of Conduct is available in the NMSU Student Handbook online: http://deanofstudents.nmsu.edu/student-handbook/1-student-code-of-conduct/

Academic misconduct is explained here: http://deanofstudents.nmsu.edu/student-handbook/1-student-code-of-conduct/3-academic-misconduct.html

Plagiarism. Plagiarism is using another person's work without acknowledgment, making it appear to be one's own. Intentional and unintentional instances of plagiarism are considered instances of academic misconduct and are subject to disciplinary action such as failure on the assignment, failure of the course or dismissal from the university. The NMSU Library has more information and help on how to avoid plagiarism at http://lib.nmsu.edu/plagiarism/.

Technology Requirements

Computer Hardware & Software

- Access to a Windows or Macintosh desktop computer or laptop with Internet access, sound, and speakers
- Canvas Learning Management System
- Microsoft Office 2007 or higher or open-source software that will produce Microsoft compatible files.
- Adobe Reader (for reading PDF files)
• Headsets with Microphone (optional, but recommended) for Adobe Connect.
• Adobe Connect (A browser plug-in will need to be installed.)
• Oracle SQL Data Modeler* (optional). This is a free tool from Oracle Corporation but you may be required to create an account with Oracle TechNet. During the download process you will be prompted to do this.
• Sea Monkey* Composer (optional). This is a free tool used to create HTML (web) pages. Any HTML editor can be used.
• Secure Shell* (optional). This is used to upload Web pages to the NMSU Web server. Other file transfer software can be used instead.

* This software can be used in the BC computer lab, which is not open on weekends, or you can use remote desktop connection to leia.nmsu.edu.

### Learning Management System

- Instructure Canvas
- Canvas Instructions

**Canvas Announcements.** I will use Announcements to send time sensitive information to the entire class. Because you can set your own notification preferences in Canvas, you will need to make sure you receive announcements daily. You are required to set your notifications for **New Announcements** to be **Right Away**.

**Web Browsers.** Use the following browsers in Canvas. Please remember to update the web browser you are using to access Canvas. Internet Explorer is not recommended for use with Canvas at this time.


Canvas does not fully support mobile devices; While there is a free Canvas mobile app available through iTunes store, a lot of functionality is unavailable when using a mobile phone. When you take this course, it is assumed you have access to a computer or laptop for full access to functionality in this course.

### Learner Support

**Accessibility Support.** Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) covers issues relating to disability and accommodations. If a student has
questions or needs an accommodation in the classroom (all medical information is treated confidentially), contact:

Trudy Luken, Director, Student Accessibility Services (SAS); Corbett Center, Rm. 244
Phone: (575) 646-6840   --   E-mail: sas@nmsu.edu   --   Web site: www.nmsu.edu/~ssd

NMSU policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct, sexual violence, sexual harassment and retaliation. For more information on discrimination issues, Title IX or NMSU’s complaint process contact:
Gerard Nevarez, Executive Director or Agustin Diaz, Associate Director
Office of Institutional Equity (OIE); O'Loughlin House
Phone: (575) 646-3635   --   E-mail: equity@nmsu.edu   --   Web site: http://www.nmsu.edu/~eeo/

Academic Services Support. NMSU provides academic support to students in a variety of ways. Here are some of these resources.

- The Student Writing Center offers free tutoring for undergraduate and graduate writers at any level of experience. Contact information and hours are at: http://english.nmsu.edu/resources/writingcenter/index.html

- Free campus Tutoring – There are undergraduate tutors from a variety of disciplines who are available to assist students. Campus Tutoring is on the west end of the first floor of Corbett Center. For more information, contact Student Success at 575.646.6050 or go to: http://ssc.nmsu.edu/

- The College of Business provides an "Academic Survival Kit" for writing and presentations at: http://business.nmsu.edu/students/survival-kit

Student Services Support. The College of Business and NMSU, in general, provide services to help students with advising. Be wise, don't self-advice. Talk to an advisor each semester to keep your educational plan on track.

- The College of Business Advising Center is at Guthrie 109. More information is at: http://business.nmsu.edu/student-services/
- NMSU Advising: http://advising.nmsu.edu/
- NMSU has other services that help students with information about financial assistance and career planning.
- Career Services: http://careerexploration.nmsu.edu/
• Financial Information: http://business.nmsu.edu/student-services/financial-aid/

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Technical Support

The ICT Customer Service Center will help you with your information technology (IT) and telecommunications needs at NMSU. The ICT Customer Service Center hours of operation are from 8:00 am until 5:00 pm Monday through Friday Mountain Time. You can contact customer service at 646-1840 or via e-mail at helpdesk@nmsu.edu.

For questions about Canvas, you can also go to the Student Technology Help web page and Student Resources.

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Accessibility of eLearning Tools

Canvas. Our learning management system (LMS) is Canvas which provides a user experience that is easy, simple, and intuitive. Special attention has been paid to making Canvas screen-readable. Here is the voluntary product accessibility template (VPAT) for Canvas. The National Federation of the Blind granted Canvas the Gold Level Web Certification in 2010.

SoftChalk. Many of the Web pages in this course were created using SoftChalk. Here is an overview of SoftChalk's VPAT statement of how it complies with the U.S. Section 508 accessibility standard.

Oracle. We will use two Oracle product during this course. Here is a link to the VPAT statement for the free, stand-alone from Oracle called SQL Developer Data Modeler and to the VPAT for the developer tool called Application Express.

Microsoft. Microsoft Office Project will be used in this course. Here is a link to the VPAT statement for this product.

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Syllabus Modifications Statement

It is my intention to adhere to the information provided here in the syllabus and in the course schedule. However, sometime changes are necessary. For example, scheduling changes typically come up when a department or college meeting is called that conflicts with my scheduled office hours. I will notify you of changes as soon as possible through the Announcements tool in Canvas.