Code # BU29 (2015)

**New Course Proposal Form**

**Undergraduate Curriculum Council** - Print 1 copy for signatures and save 1 electronic copy.

**Graduate Council** - Print 1 copy for signatures and send 1 electronic copy to [pheath@astate.edu](mailto:pheath@astate.edu)

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| --- |
| **New Course or**  **Experimental Course (1-time offering) (Check one box)**  *Please complete the following and attach a copy of the bulletin page(s) showing what changes are necessary.* |

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| --- | --- |
| J.K. Sinclaire 2/25/2016 **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Chair:** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **General Education Committee Chair (If applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |

1. Contact Person (Name, Email Address, Phone Number)

J.K. Sinclaire, PO Box 130, State University, AR 72467

2. Proposed Starting Term and Bulletin Year

**Fall 2016**

3. Proposed Course Prefix and Number (Confirm that number chosen has not been used before. For variable credit courses, indicate variable range. *Proposed number for experimental course is 9*. )

**CIT 3603**

4. Course Title – if title is more than 30 characters (including spaces), provide short title to be used on transcripts. Title cannot have any symbols (e.g. slash, colon, semi-colon, apostrophe, dash, and parenthesis). Please indicate if this course will have variable titles (e.g. independent study, thesis, special topics).

**Systems Analysis and Design**

5. Brief course description (40 words or fewer) as it should appear in the bulletin.

**Covers the basic techniques used in the analysis, design, and implementation of computer based information systems. Provides overview of the systems development life cycle, systems documentation and program specifications, data gathering and information reporting activities, transition from analysis to design.**

6. Prerequisites and major restrictions. (Indicate all prerequisites. If this course is restricted to a specific major, which major. If a student does not have the prerequisites or does not have the appropriate major, the student will not be allowed to register).

1. Are there any prerequisites? Choose an item.
   1. If yes, which ones?

PREREQUISITE OR COREQUISITE: CIT 3403 Database Management

* 1. Why or why not?

Course assignments require students to develop logical database designs and relational database models.

1. Is this course restricted to a specific major? No
   1. If yes, which major? Enter text...

7. Course frequency(e.g. Fall, Spring, Summer). *Not applicable to Graduate courses.*

Fall

8. Will this course be lecture only, lab only, lecture and lab, activity, dissertation, experiential learning, independent study, internship, performance, practicum, recitation, seminar, special problems, special topics, studio, student exchange, occupational learning credit, or course for fee purpose only (e.g. an exam)? Please choose one.

Lecture

9. What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental)?

standard letter

10. Is this course dual listed (undergraduate/graduate)?

No

11. Is this course cross listed? (If it is, all course entries must be identical including course descriptions. It is important to check the course description of an existing course when adding a new cross listed course.)

No

1. If yes, please list the prefix and course number of cross listed course.

Enter text...

1. Are these courses offered for equivalent credit? Choose an item.

Please explain. Enter text...

12. Is this course in support of a new program? No

a. If yes, what program?

Enter text...

13. Does this course replace a course being deleted? No

a. If yes, what course?

Enter text...

14. Will this course be equivalent to a deleted course? No

a. If yes, which course?

Enter text...

15. Has it been confirmed that this course number is available for use? Yes

*If no: Contact Registrar’s Office for assistance.*

16. Does this course affect another program? No

If yes, provide contact information from the Dean, Department Head, and/or Program Director whose area this affects.

Enter text...

**Course Details**

17. Outline (The course outline should be topical by weeks and should be sufficient in detail to allow for judgment of the content of the course.)

Week One: Introduction to the systems development environment; core concepts, systems development life cycle, alternative approaches to development, participatory design, agile methodologies

Week Two: Analyzing the business case, the strategic planning process, SWOT analysis, mission statement, reasons for IS projects, factors that affect IS projects

Week Three: Managing the information systems project, initiating, planning, executing, closing, preparing project plans, Gantt charts, using project management software, selecting IS development projects, deliverables and outcomes, assessing project feasibility, building a baseline project plan.

Week Four: Overview of systems analyst’s communication tools for organizing and preparing written reports and oral presentations required during systems development (case study).

Week Five: Requirements modeling, methods for determining requirements, interviewing and listening, observing users, analyzing procedures and documents, joint application design, prototyping, preparing documentation and creating models that will be used to design and develop the system.

Week Six: Data and process modeling techniques to show how the system transforms data into useful information, creation of a logical model that supports business operations and meets user needs.

Week Seven: Object-oriented techniques to document, analyze, and model an information system.

Week Eight: Development strategies, software acquisition alternatives, outsourcing options, in-house development, cost-benefit analysis and financial analysis tools, RFPs and RFQs, prototyping, software development trends.

Week Nine: Overview of systems analyst’s computer-aided systems engineering tools (case study).

Week Ten: Designing the human interface, input methods, screen design, error controls, source document design, web interfaces, menu-driven navigation, data integrity, designing system output, formatting forms and reports.

Week Eleven: Database design, transforming E-R diagrams into relations, integration problems, logical database design, developing a physical plan for data organization, storage, and retrieval.

Week Twelve: Planning a system architecture, translating the logical design into a physical blueprint that includes hardware, software, network support, processing methods, and security, resulting in a system design specification.

Week Thirteen: Systems implementation and operation, processes of coding, testing, and installation; processes of documenting the system, training users, supporting users; process of maintaining information systems, the testing process, acceptance testing by users, planning installation, documenting the system, preparing user documentation, training and supporting users.

Week Fourteen: Overview of systems analyst’s financial analysis tools (case study)

Week Fifteen: Managing systems support and security, types of system maintenance, system performance issues and maintenance tools, analysis of security levels (physical, network, application, file, user, procedural), data backup and recovery issues.

Course requirements: Eight 1-2 page case assignments, two analysis toolkit assignments, three exams, one oral presentation

18. Special features (e.g. labs, exhibits, site visitations, etc.)

None

19. Department staffing and classroom/lab resources

Enter text...

1. Will this require additional faculty, supplies, etc.? No

20. Does this course require course fees? No

*If yes: please attach the New Program Tuition and Fees form, which is available from the UCC website.*

**Course Justification**

21. Justification for course being included in program. Must include:

a. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain)

Students will analyze and articulate requirements for computer-based information systems that people and organizations use to collect, filter, process, create, and distribute data. This course involves the development and reinforcement of knowledge/competency for multiple CIT program-level learning goals that focus on analytical skills, communication skills, decision-making and organization skills.

b. How does the course fit with the mission established by the department for the curriculum? If course is mandated by an accrediting or certifying agency, include the directive.

The CIT program exists to produce graduates who possess the right combination of knowledge and hands-on expertise to take care of both an organization’s information technology infrastructure and the people who use it. CIT 3603 Systems Analysis and Design provides an overview of project evaluation, planning and design, and covers the basic techniques used in the analysis, design and implementation of information systems.

c. Student population served.

Undergraduate CIT majors

d. Rationale for the level of the course (lower, upper, or graduate).

The course is appropriate for undergraduate CIT majors as it introduces and develops skills in the analysis and design of computer-based information systems. This is an upper-level course because it builds on knowledge gained from prior coursework which includes two other upper-division courses, CIT 3013 Management Information Systems and CIT 3403 Database Management.

**Assessment**

**University Outcomes**

22. Please indicate the university-level student learning outcomes for which this new course will contribute. Check all that apply.

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| --- | --- | --- |
| * 1. Global Awareness | * 1. Thinking Critically | * 1. Information Literacy |

**Relationship with Current Program-Level Assessment Process**

23. What is/are the intended program-level learning outcome/s for students enrolled in this course? Where will this course fit into an already existing program assessment process?

**The intended program-level learning outcomes for this course are:**

1. Evaluate organizational computer systems and network needs, and recommend possible solutions **(analytical skills)**
2. Explain IT problems and solutions, and give clear instructions **(communication skills)**
3. Make decisions about how to allocate resources in order to reach organizational goals **(decision-making skills)**
4. Plan and coordinate work to make the organization run efficiently **(organizational skills)**

24. Considering the indicated program-level learning outcome/s (from question #23), please fill out the following table to show how and where this course fits into the program’s continuous improvement assessment process.

|  |  |  |  |
| --- | --- | --- | --- |
| **Program-level Expected Outcomes** | **Assessment Procedures Criterion** | **Assessment**  **Timetable** | **Who is responsible for assessing and reporting results?** |
| Evaluate business processes and computer system needs in order to recommend possible solutions. | This course involves the development and reinforcement of the knowledge/competency. Students will be required to complete numerous exercises where they are supplied with a business process/system need and are to determine the best solution(s). | Each term | CIT faculty |
| Explain IT problems and solutions, and give clear instructions. | This course involves the development and reinforcement of the knowledge/competency.  Students will be required to complete a case study in which they evaluate an IT problem, develop a project to solve the problem, and present the solution in an extensive case document. | Each term | CIT faculty |
| Make decisions about how to allocate resources in order to reach organizational goals. | This course involves the development and reinforcement of the knowledge/competency. Students will be required to complete a project that requires a financial analysis and preparation of financial documents for an IT business case. | Each term | CIT faculty |
| Plan and coordinate work to make the organization run efficiently. | This course involves the development and reinforcement of the knowledge/competency. Students will be required to complete numerous exercises in which they will develop IS project documentation that include Gantt charts, development schedules for IS deliverables and outcomes, project feasibility reports and baseline project plans. | Each term | CIT faculty |

**Course-Level Outcomes**

25. What are the course-level outcomes for students enrolled in this course and the assessment measures and benchmarks for student-learning success?

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| Expected Outcomes | Assessment Procedures  Criterion | Assessment Cycle and Benchmark | Who is responsible for assessing and reporting the results? |
| 1. Students will demonstrate understanding of the information systems development process. | Students will be required to complete numerous exercises where they are supplied with a business problem and are to determine potential information system solutions to meet a users need. | Measured each fall semester  Benchmark for performance: 80% meets or exceeds | Course instructor is responsible |
| 1. Students will examine development methodologies and compare their appropriateness. | We will include case studies that require students to consider alternative development methodologies for various IS solutions. | Measured each fall semester  Benchmark for performance: 80% meets or exceeds | Course instructor is responsible |
| 1. Students will describe and apply information requirements determination methods to evoke end-user needs and expectations and develop solutions. | Students will be required to complete exercises where they perform information requirements determination using methods that include structured and unstructured interviews, document review, and preparation of user questionnaires. | Measured each fall semester  Benchmark for performance: 80% meets or exceeds | Course instructor is responsible |
| 1. Students will prepare written technical documents. | Students will be required to produce (1) use case diagrams that represent the functional requirements of a system; (2) project scope statements; (3) business case documentation to justify IT investment; and (4) detailed project work plans. | Measured each fall semester  Benchmark for performance: 80% meets or exceeds | Course instructor is responsible |
| 1. Students will describe data modeling and process requirements of an information system. | We will include assignments that require students to develop logical database designs and relational database models that are required for system design. | Measured each fall semester  Benchmark for performance: 80% meets or exceeds | Course instructor is responsible |
| 1. Students will apply effective project planning and management techniques. | Students will be required to develop project schedules to identify task relationships and dependencies and assign time estimates to determine project start and stop dates. | Measured each fall semester  Benchmark for performance: 80% meets or exceeds | Course instructor is responsible |

**Bulletin Changes**

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| **Instructions** |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Follow the following guidelines for indicating necessary changes.**  **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.**  - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)  - New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font).  - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)  *You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.*  *Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

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**CIT 3533. Microcomputer Applications II** Continuation of CIT 1503 to cover topics in the area of operating systems, word processors, spreadsheets, presentation techniques, and PC databases. Prerequisite, CIT 1503 or CS 1013. Fall.

***CIT 3603. Systems Analysis and Design Covers the basic techniques used in the analysis, design, and implementation of computer based information systems. Provides overview of the systems development life cycle, systems documentation and program specifications, data gathering and information reporting activities, transition from analysis to design.*** ***Corequisite, CIT 3403. Fall.***

**CIT 3623. LAN Administration** Covers topics pertinent to the administration of a local area network. Topics include, user management, file management, security, and network printing. Pre­requisite, Computer literacy. Fall.