Banner/Catalog Information (Coversheet)

1. _X__New Course or _____Revision of Existing Course

2. **Course prefix and number:** __CIT 4853_____

3. **Short title:** _ Emerging Trends in CIT_____

4. **Long title:** _Emerging Trends in CIT _____

5. **Hours per week:** _2__ Class   _2__ Lab   _3_ Credit

6. **Terms:** ___ Fall   _X__ Spring   __ Summer   _X_ On demand

7. **Initial term**: ___ Fall   _X__ Spring   ___ Summer   Year: _2019___

8. **Catalog course description:** _ Study of emerging topics in tools, technology and techniques with variable course content. This course will expose students to the latest computer and information technology topics which are prevalent in the environment of education, industry, and personal life.

9. **Course attributes:**

    General education component: ___ N/A _____

    ___ Cultural diversity ___ Honors ___ Writing centered   ___ Writing intensive ___Writing active

10. **Instructional delivery**
    Type of Course:

    ___ Lecture   ___ Lab   _X__ Lecture/lab combined   ___ Independent study/research

    ___ Internship   ___ Performance   ___ Practicum/clinical ___ Other, specify: _____

    Mode(s) of Delivery:

    _X__ Face to Face   _X__ Online   ___ Study Abroad

    _X_ Hybrid, specify approximate amount of on-line and face-to-face instruction___~ 51% Face-to-face and 49% online_____

11. Course(s) to be deleted from the catalog once this course is approved. ___NONE_____

12. **Equivalent course(s):** _NONE_____

    a. **Are students allowed to take equivalent course(s) for credit?** ___ Yes   _X__ No

13. **Prerequisite(s):** _CIT 3853 or permission of instructor_____

    a. **Can prerequisite be taken concurrently?** ___ Yes   _X__ No

    b. **Minimum grade required for the prerequisite course(s)?** _C__

    c. **Use Banner coding to enforce prerequisite course(s)?** _X_ Yes   ___ No

d. Who may waive prerequisite(s)?

___ No one   _X__ Chair   _X__ Instructor   __ Advisor   ___ Other (specify)

14. Co-requisite(s): ___NONE_____

15. Enrollment restrictions

a. Degrees, colleges, majors, levels, classes which <u>may</u> take the course: _

Completion of at least 60 hours or "Junior Standing" of major in CIT, DGT, or EGT OR
minor in CIT, DGT, or EGT OR
graduate students of TEC OR
permission of instructor

b. Degrees, colleges, majors, levels, classes which may <u>not</u> take the course: __ ALL OTHERS _

16. Repeat status: ___ May not be repeated   _X__ May be repeated once with credit

17. Enter the limit, if any, on hours which may be applied to a major or minor: ___

18. Grading methods: _X__ Standard   ___ CR/NC   __ Audit   ___ ABC/NC

19. Special grading provisions:

___ Grade for course will <u>not</u> count in a student's grade point average.

___ Grade for course will <u>not</u> count in hours toward graduation.

___ Grade for course will be removed from GPA if student already has credit for or is registered in:
_____

___ Credit hours for course will be removed from student's hours toward graduation if student
already has credit for or is registered in: _____

20. Additional costs to students:
Supplemental Materials or Software_____

Course Fee _X__No ___Yes, Explain if yes_____

21. Community college transfer:

___ A community college course may be judged equivalent.

_X_ A community college may <u>not</u> be judged equivalent.

Note: Upper division credit (3000+) will <u>not</u> be granted for a community college course, even if the
content is judged to be equivalent.

Rationale, Justifications, and Assurances (Part I)

1. ___Course is required for the major(s) of _

   ___Course is required for the minor(s) of _____

   ___Course is required for the certificate program(s) of _____

   _X__ Course is used as an elective of <u>Computer and Information Technology</u> __

2. **Rationale for proposal** :

   Computer and Information Technology is a profession expected to grow 13 % each year till 2026 according the Bureau of Labor Statistics. In Illinois alone this equates to several hundreds of jobs each year. As a result, this course is being developed to cover the latest trends and topics in the Computer Information and Technology program. Currently, there is no coursework that is flexible for students seeking knowledge in this area online or in a hybrid format.

3. **Justifications for (answer N/A if not applicable)**

   <u>Similarity to other courses</u>: N/A

   <u>Prerequisites</u>: Material in this course is built on the knowledge of CIT 3853, and uses their concepts and knowledge as a foundation for this new course CIT 4853.

   <u>Co-requisites</u>: N/A

   <u>Enrollment restrictions</u>:

   > Completion of at least 60 hours or "Junior Standing" of major in CIT, DGT, or EGT OR
   >
   > minor in CIT, DGT, or EGT OR
   >
   > graduate students of TEC OR
   >
   > permission of instructor

   <u>Writing active, intensive, centered</u>: N/A

4. **General education assurances (answer N/A if not applicable)**

   <u>General education component</u>: N/A

   <u>Curriculum</u>: N/A

   <u>Instruction</u>: N/A

   <u>Assessment</u>: N/A

5. **Online/Hybrid delivery justification & assurances (answer N/A if not applicable)**

   <u>Online or hybrid delivery justification</u>:

   The content and structure for this course relies upon independent research, in-depth group discussion, and video based lecture. As compared to many lab courses already offered in technology area, this course requires online delivery of lecture and discussion and face-to-face lab activities for applied projects. For content delivered online, the course employs online video presentations, structured web discussions focused on reading assignments, and linked to articles submitted to the instructor. Students are required to draw on research and review of articles to discuss and develop fundamental procedural knowledge of application. Discussions invite students to explore in more

detail the required knowledge and procedures to analyze and design systems. Discussions and examinations will be administered and submitted via the online course management tool. With the current technology, many software design companies have made their software tools more readily accessible for students. The Internet connection speed for many users has increased thereby allowing for higher quality rich media instruction to be delivered. Finally, the course management tools that the university now uses allows there to be a richer interaction between students and faculty. To accommodate this situation, many of the given activities may be completed in a hybrid format.

Instruction:

This course employs instructor led online presentations, student reading assignments, student applied design assignments, peer critique and troubleshooting, student presentations, and examinations. After reviewing the instructor led presentations and completing the student reading assignments, students will be required to draw on what they have read and then to apply it to a context of analyzing and designing software systems. While working on these projects, students may engage in the activity of troubleshooting or critique while posting their work in an online discussion board for both classmates and the instructor to provide feedback and guidance. Presentations will provide learners a forum to share the results of their work and receive further feedback. Reading assignments, applied projects, and examinations will be administered, collected, and/or submitted via the online course management tool. Presentations may also be delivered in the course tool or face-to-face. All faculty who will deliver this course online are/will be OCDi (or appropriate equivalent) trained.

Integrity:

Work submitted online, such as discussions and examinations, will be substantiated via learners providing citation in APA format and submitting related articles to quantify work. Further, the length, frequency, quality, and integrity of discussion posts can be monitored via the online course management tool. Examinations will require the same of learners and additionally will use software tools, such as "TURNITIN", to check work for the integrity and authenticity of submitted assignments. The examinations will be time restricted and of sufficient length to prohibit consultation of unauthorized sources. Work submitted face-to-face in applied lab projects will be checked for authenticity via the individualized nature of project completion. Requirements for projects will require learners to engage in activities that require creation of original content for either themselves or local entity.

Interaction:

For online content, the course employs email, web-based discussions, exploration of off-site Internet resources, web-based presentations, web chat rooms and lab based applied project work. The instructor will communicate with students through the online discussion board and web-based discussions. Email may also be a tool used for the instructor to communicate with an individual student or to post course announcements. The learners for this course may also communicate with

one another for these tools. During digital office hours, the instructor will remain available for discussion during certain times and communicate using a chat room tool in the learning management system. For face-to-face interaction, the instructor may communicate synchronously with the learners during open lab activities and during office hours. The learners are also free to communicate with other learners during lab activities.

Model Syllabus (Part II)

Please include the following information:

1. Course number and title
    CIT 4853 – Emerging Trends in CIT

2. Catalog description
    Study of emerging topics in tools, technology and techniques with variable course content. This course will expose students to the latest computer and information technology topics which are prevalent in the environment of education, industry, and personal life.

3. Learning objectives.
    Upon completion of this course, students will be able to:

    a. Discuss advantages and limitations of various emerging technology tools. (WCR 1-7, SL 1-3) (Grad 1-4)
    b. Research various emerging technologies. (SL 1-3, WCR 1-7) (Grad 1-4)
    c. Create software applications utilizing emerging technologies. (SL 1-3, CT 2-4) (Grad 1-2)
    d. Analyze the effectiveness of various emerging technologies. (SL 1-3, QR 1-6) (Grad 3,4)
    e. Publish and/or present finished projects in a professional format to be critiqued by peers and professionals. (SL 1-7) (Grad 1-4)
    f. Evaluate, appraise and implement improvements of software applications utilizing emerging technologies. (SL 1-3, WCR 1-6, CT 1-6, RC 3) (Grad 1-3)

Graduate Learning Goals

Objective	Depth of content knowledge	Critical thinking and problem solving	Oral and/or written communication	Advance scholarship through research and creative activity
(a)	X	X	X	X
(b)	X	X	X	X
(c)	X	X		
(d)			X	X
(e)	X	X	X	X
(f)	X	X	X	

Undergraduate Learning Goals

Objective	Speaking and Listening	Critical Thinking	Writing and Critical Reading	Quantitative Reasoning	Responsible Citizenship
(a)	X		X		
(b)	X	X	X		
(c)	X	X			
(d)	X			X	
(e)	X				
(f)	X	X	X		X

4. Course materials.

This will include lecture notes, online resources (such as online tutorials, research papers), etc. There will be no specific textbook requirement.

5. Weekly outline of content.

The following is an example for the emerging topic, Autonomous Driving; it might change, based on time constraints:

Face-to-Face / Online Modality:

Week	Topics	Activities
Week 1	The landscape of today's CIT* world	
Week 2	Emerging and current standards/ tools/ techniques in CIT	
Week 3	Project management: SCRUM	Lab 1
Week 4	Project management: Agile Web Development	Lab 2
Week 5	Artificial Intelligence	
Week 6	Artificial Intelligence	
Week 7	Artificial Intelligence	Project / Lab 3
Week 8	**Midterm Exam**	
Week 9	Machine Learning	
Week 10	Machine Learning	
Week 11	Machine Learning	Lab 4
Week 12	Emerging CIT Technologies	
Week 13	Emerging CIT Technologies	Lab 5
Week 14	Emerging CIT Technologies	
Week 15	Final Project Presentations	
Week 16	**Final Exam**	Research Paper (only for graduate students)

*CIT – Computer and Information Technology

Hybrid Modality:

Week	Topics	Activities
Week 1	The landscape of today's CIT* world	
Week 2	Emerging and current standards/ tools/ techniques in CIT	
Week 3	Project management: SCRUM	Lab 1
Week 4 Face to Face Meetings: 8 am to 5 pm	Question/Answers/Review Sessions of Weeks 1 to 3 Project management: Agile Web Development	Lab 2
Week 5 – 7	Artificial Intelligence	Lab 3
Week 8	Question/Answers/Review Sessions of Weeks 5 to 7 Machine Learning **Midterm Exam**	
Week 9 – 11	Machine Learning	Lab 4
Week 12 – 14	Emerging CIT Technologies	Lab 5
Week 15 Face to Face Meetings: 8 am to 5 pm	Question/Answers/Review Sessions of Weeks 8 to 14 Final Project Presentations	
Week 16	**Final Exam**	Research Paper (only for graduate students)

6. Assignments and evaluation, including weights for final course grade.

	Undergraduate (U)	Graduate (G)
Lab Assignments	45 %	40 %
Class Participation	5 %	5 %
Exams	35 %	35 %
Class Projects	15 %	10 %
Research Paper	N/A	10 %
Total	100 %	100 %

7. Grading scale.
A = 90% or above, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, F = Below 60%

8. Correlation of learning objectives to assignments and evaluation.

Objective	Assignments U: 45% G: 40%	Class Participation U: 5% G: 5%	Projects U: 15% G: 10%	Exams U: 35% G: 35%	Research Paper G: 10%
a. Discuss advantages and limitations of various emerging technology tools. (WCR 1-7, SL 1-3) (Grad 1-4)	X	X		X	X
b. Research various emerging technologies. (SL 1-3, WCR 1-7) (Grad 1-4)	X	X	X		
c. Create software applications utilizing emerging technologies. (SL 1-3, CT 2-4) (Grad 1-2)	X		X		
d. Analyze the effectiveness of various emerging technologies. (SL 1-3, QR 1-6) (Grad 3,4)	X	X	X	X	X
e. Publish and/or present finished projects in a professional format to be critiqued by peers and professionals. (SL 1-7) (Grad 1-4)	X			X	X
f. Evaluate, appraise and implement improvements of software applications utilizing emerging technologies. (SL 1-3, WCR 1-6, CT 1-6, RC 3, Grad 1-3)		X			X

Date approved by the department or school: 1/8/2018
Date approved by the college curriculum committee: 01/30/18
Date approved by the Honors Council *(if this is an honors course):*

Date approved by CAA: CGS: