

IS-71C
UWUCC AP 11/10/15
Senate App 12/1/15

IFMG414 Internet of Things New3Crs-2015-10-19

Form Information

First Step: Change the text in the [brackets] so it looks like this: **CRIM 101 Intro to Criminology-NewCrs-2015-08-10**

Second Step: Click save on bottom right

Third Step: Make sure the word "**DRAFT**" is in yellow at the top of the proposal

Fourth Step: Click on **EDIT CONTENTS** and start completing the template. When exiting or done, click save on bottom right

When ready to submit click on the workflow icon and hit approve. It will then move to the chair as the next step in the workflow.

Please direct any questions to curriculum-approval@iup.edu

*Indicates a required field

Proposer*	Azad Ali	Proposer Email*	azad.ali@iup.edu
Contact Person*	Azad Ali	Contact Email*	azad.ali@iup.edu
Proposing Department/Unit*	Information Systems and Decision Sciences	Contact Phone*	724-357-5747

(A) Course Prefix* **See the Registrar's List of Unavailable Course Numbers at <http://www.iup.edu/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=129323>**

IFMG

(B) Course Number* **If Dual Listed, enter both course numbers**

414

(C) Course Title* Internet of Things

(D) Course Level* undergraduate-level

(E) Cross Listed* **Dual Listed = Courses listed at two levels, such as undergraduate and graduate, masters and doctoral, etc. Cross Listed = Course has more than one prefix such as GEOG/RGPL 233**

NO

If YES, with:

(F) Variable Credit* NO

If YES, enter the number of credits:

(G) Variable Title* NO

If YES, enter the title(s):

(H) Number of Credits*

Class Hours:3

Lab Hours:0

Credits:3

(I) Prerequisite(s) IFMG 352 and (IFMG 210 or 230)

(J) Co-requisite(s) *This means that another course must be taken in the same semester as the proposed course*

(K) Additional Information *Check all that apply. Note: Additional documentation will be required*

** Teacher Education: Please complete the Teacher*

Education section of this form (below)

** Liberal Studies: Please complete the Liberal Studies*

section of this form (below)

** Distance Education: Please complete the Distance*

Education section of this form (below)

(L) Recommended Class Size YES
Number (Enter Zero if No):30

If YES: (Check one of the following reasons and provide a narrative explanation)

Pedagogical
Explain (required):

A course for students to teach the students about Internet of Things (IoT) require a lot of hands-on computer. Working in this environment is likely to produce a lot of challenges that need to be dealt with during class. Having a class size of more than 30 students is likely to generate challenges that delays the coverage of the course content.

(M) Catalog Description*

Guidelines: Do not include pre/co-requisite information here. The registrar prefers a concise description of course content, beginning with an active verb.

Introduces the world of the Internet of Things (IoT) including conceptual foundations and practical applications. Presents the theoretical concepts and the hands on knowledge on creating and managing IoT applications through assigned readings, prototyping, simulation and mock-up exercises. Classifies business models applicable to IoT. Examines the ethical standards pertinent to the field of IoT.

(N) Student Learning Outcomes*

These should be measurable, appropriate to the course level, and phrased in terms of student achievement, not instructional or content outcomes

If dual listed, indicate additional learning objectives for the higher level course.

1. Examine technological and historical development that led to the emergence of IoT
2. Identify criteria for IoT connections
3. Form procedures for prototyping with IoT
4. Launch measures for physical IoT design
5. Develop techniques for writing embedded IoT code
6. Identify the business models applicable to IoT
7. Classify ethical standards related to IoT

(O) Brief Course Outline*

Give an outline of sufficient detail to communicate the course content to faculty across campus. It is not necessary to include specific readings, calendar, or assignments

As outlined by the federal definition of a "credit hour", the following should be a consideration regarding student work - For every one hour of classroom or

direct faculty instruction, there should be a minimum of two hours of out of class student work.

The Internet of Things (IoT): An Overview

Internet Principles

Physical computing

Ubiquitous computing

Intelligent systems

Design Principles for IoT Connections

Machine to Machine

Machine to Infrastructure

Machine to environment

Thinking About Prototyping

Principles of prototyping

Prototyping techniques

Prototyping and simulation

Prototyping for IoT

Prototyping Embedded Devices

- Prototyping the Physical Design
- Prototyping Online Components
- Techniques for Writing Embedded Code
 - Asset tracking
 - Automatic traffic organization
 - Process control and optimization
 - Resource allocation and optimization
- Business Models for IoT
 - Business management for IoT
 - Localization of technologies
 - Ubiquity and Omni presence
 - Miniaturization and invisibility
 - Incorporated intelligence
 - Autonomous and unpredictable behavior
- Ethical challenges for IoT
 - Accessibility issues of IoT
 - Privacy issues of IoT
 - Information integrity in IoT
 - Property rights on information in IoT

Rationale for Proposal

(P) Why is this Course Being Proposed?*

It is part of a new IT track that is proposed in our department. There is a strong demand for a new course in this viable technology, thus we introduce it here.

(Q) University Senate Summary of Rationale

Please enter a single paragraph summary/rationale of changes or proposal for University Senate.

(R) How Does it Fit into the Departmental Curriculum?*

Check all that apply

Free Elective

Major Requirement

If Other, please explain:

(S) Is a Similar Class Offered in Other Departments?*

NO

Please Provide Comment:

No other similar courses offered

(T) Does it Serve the College/University Above and

YES

Please Provide Comment:

Beyond the Role it Serves in the Department?*

Part of a growing solution for technology problems, students from other departments (or from the industry) may find it useful for their organization

(U) Who is the Target Audience for the Course?*

Department Elective

If Other, please explain:

(V) Implications for Other Departments*

A. What are the implications for other departments?

(For Example: overlap of content with other disciplines, requirements for other programs)

No overlap with other disciplines

B. How have you addressed this with other department(s) involved? What was the outcome of that attempt?

(W) Attach Supporting Documents for Implications,

File

Modified ^

If Necessary

(X) Are the Resources Adequate?*

(i.e. faculty, space, equipment, laboratory supplies, library materials, travel funds, etc.)

YES

Please Provide Comment:

Last year, two departments (MIS and BTS) were merged together. Part of the agreement at the time of merging was to develop a new track for Information Technology (IT) students. So we are working here to develop courses for this new track. Faculty from the old BTS program will be teaching courses for the new track.

Distance Education Section

- Complete this section only if adding Distance Education to a New or Existing Course

If Completing this Section,

Check the Box to the Right:

Course Prefix/Number

Course Title

Type of Proposal

See CBA, Art. 42.D.1 for Definition

Brief Course Outline

Give an outline of sufficient detail to communicate the course content to faculty across campus. It is not necessary to include specific readings, calendar or assignments

As outlined by the federal definition of a "credit hour", the following should be a consideration regarding student work - For every one hour of classroom or

direct faculty instruction, there should be a minimum of two hours of out of class student work.

Rationale for Proposal (Required Questions from CBA)

How is/are the instructor(s) qualified

in the Distance Education delivery

method as well as the discipline?

For each outcome in the course, describe

how the outcome will be achieved using

Distance Education technologies.

How will the instructor-student and

student-student interaction take place?

(if applicable)

How will student achievement be evaluated?

How will academic honesty for tests

and assignments be addressed?

Liberal Studies Section

- Complete this section only for a new Liberal Studies course or Liberal Studies course revision

If Completing this Section,

Check the Box to the Right:

Liberal Studies Course Designations (Check all that apply)

Learning Skills:

Knowledge Area:

Liberal Studies
Elective

Please mark the designation(s) that apply - must meet at least one

Expected
Undergraduate
Student

Describe how each Student Learning Outcome in the course enables students to become Informed Learners, Empowered Learners and/or Responsible Learners

Learning Outcomes
(EUSLOs)

See <http://www.iup.edu/WorkArea/DownloadAsset.aspx?id=181694>

Description of the
Required

Narrative on how the course will address the Selected Category Content

Content for this
Category

All Liberal Studies courses are required to include perspectives on cultures and have a supplemental reading.

Please answer the following questions.

Liberal Studies
courses must
include

the perspectives and
contributions

of ethnic and racial
minorities and

of women whenever
appropriate to

the subject matter.
Please explain

how this course will
meet this

criterion.

Liberal Studies courses require the reading and use by students of at least one non-textbook work of fiction or non-fiction or a collection of related articles. Please describe how your course will meet this criterion.

Teacher Education Section

- Complete this section only for a new Teacher Education course or Teacher Education course revision

If Completing this Section, Check the Box to the Right:

Course Designations:

Key Assessments

For both new and revised courses, please attach (see the program education coordinator):

- The Overall Program Assessment Matrix
- The Key Assessment Guidelines
- The Key Assessment Rubric

File

Modified ▲

No files shared here yet.

Narrative Description of the

How the proposal relates to the Education Major

Required Content

For Deans Review

Are Resources Available/Sufficient for this Course?

Is the Proposal Congruent with the College Mission?

Has the Proposer Attempted to Resolve Potential Conflicts with Other Academic Units?

Comments: