From Sergio Lence, 4/21/2016

1. An e-mail from Craig Ogilvie regarding the GCCC decision to add a line to the catalog about GR ST 590 classes not being able to be used on the POSC for degree programs.

"The vote of the committee reflects concerns about issuing ISU credits for courses not taught or evaluated by ISU. Some in the committee felt that it would be more appropriate for those courses to be treated as transfer credits. The vote reflects a compromise, which tries to accommodate the request, while recognizing that these courses are not viewed the same as regular ISU courses. As approved, there is nothing preventing students from taking the courses and earning ISU credits for them; hence, if the POSC of a student sees value in him/her taking one of such courses, it can definitely encourage him/her to do so."

 From:
 Graves, William R [G COL]

 To:
 Strand, Judith K [G COL]

 Cc:
 Lence, Sergio H [ECONA]

Subject: Re: CIRTL MOU?

Date: Tuesday, April 05, 2016 9:15:43 AM

Attachments: image002.png

image003.png image004.png

Hi Judy,

I'm sorry that I will be out of town and unable to attend the GCCC meeting this afternoon. I reviewed the MOU for CIRTL and see nothing about giving academic credit to students who participate in CIRTL programs. I therefore think we could grant credit, but we are not obligated to do so. I remain concerned that unless a program is being offered by someone at lowa State, we would be granting local 590 credit for work that's really more like a transfer course. Yes, a local person we trust is entering a grade, but my understanding is that our local person would only be entering a grade that someone at another institution said was appropriate — with little or no direct knowledge of the student's performance. This is why I had raised the possibility of different sections of GR ST 590, one for CIRTL work originating at lowa State, another for CIRTL work originating at another school. That latter section would need to be listed as transfer credit on the POSC.

Other concerns I have include that apparently there would be no limit on the number of these credits that a student could use toward a graduate degree, and that there would no limit on the use of these in certificate programs of study as well.

If the GCCC is supportive of creating this 590, perhaps they would want to consider different sections and a conservative limit on the number of these credits that could count toward a degree/certificate.

Also what about grading only on an S/F basis?

Lastly, what would stop a student in, say, Agronomy, from registering for Agron 590 and making local arrangements to use CIRLT work to fulfill the expectations of that 590? I'm not encouraging that, but wouldn't it be possible.

Thanks, Bill

William R. Graves
Associate Dean - Graduate College
1137 Pearson Hall, Iowa State University
Ames, IA 50011-2206

From: <Strand>, "Judith K [G COL]" <<u>istrand@iastate.edu</u>>

Date: Friday, February 5, 2016 at 5:36 PM

To: "Graves, William R [G COL]" < graves@iastate.edu>

Subject: RE: CIRTL MOU?

Bill,

Pass/Not Pass is a student choice. From what I understand, the professor does not even know the student requests it. If the student gets a D or better, they Pass. If not, then Fail. Pass/Not Pass cannot be used on a POSC.

If a class is offered for S/F, everyone gets S/F. To get an S, a student is to have a B or better grade, If not, F. S/F can be used on a POSC. It only affects the GPA if it is an F. There are supposed to be no more than 20% of the classes on the POSC taken as S/F (not counting research), but I'm not sure we check for that on the POSC. For certificates, I talked to Lisa, and I don't think there is a minimum or maximum number of S/F classes.

Judy

From: Graves, William R [G COL]

Sent: Friday, February 05, 2016 2:23 PM

To: Strand, Judith K [G COL] < <u>jstrand@iastate.edu</u>>

Subject: Re: CIRTL MOU?

Judy,

What would be implications be of S/F vs. Pass/Not Pass? Also how would either of these affect the Graduate Student Teaching Certificate?

Another question: Could we create GR ST 590 section 1 for CIRTL classes taught from Iowa State and GR ST 590 section 2 for CIRTL classes originating from another university/non-Iowa State faculty? If we could do that, could we then have the POSC system programmed such that GR ST 590 section 2 would need to be listed as a transfer course?

Bill

William R. Graves
Associate Dean - Graduate College
1137 Pearson Hall, Iowa State University
Ames, IA 50011-2206

From: <Strand>, "Judith K [G COL]" <<u>istrand@iastate.edu</u>>

Date: Friday, February 5, 2016 at 2:08 PM

To: "Graves, William R [G COL]" <<u>graves@iastate.edu</u>>

Subject: RE: CIRTL MOU?

Bill,

There are no specifics about graduate faculty members or graduate classes. Below are parts of other documents for CIRTL. Toward the bottom there is a section on course credits. My biggest

question is why are the courses offered for grades? It seems that if they are mainly for professional development, S/F would be appropriate and then it wouldn't enter into their GPA.

Judy

The programmatic components of the local learning community will include (but are not limited to) courses, seminars, workshops and other activities. These could be newly created, build on current

institutional offerings, or draw on existing programs throughout the Network. Through involvement in the local learning community, future faculty will develop skills aligned with the CIRTL learning

outcomes. (www.cirtl.net/CIRTLoutcomes).

There are learning outcomes related to the core classes CIRTL provides. http://www.cirtl.net/LearningOutcomes

http://www.cirtl.net/courses/logistics

Course Credit

Most CIRTL courses are offered for credit, and it's up to students whether they choose to take a course for credit or not. Students are expected to complete all required coursework regardless of credit arrangement. Students taking a course for credit must submit a grade request form by the end of the second week of class.

Coursework is typically equivalent to a 1 to 2-credit course, though not every CIRTL course is available for credit; you can see how many credits your course is offered for on the Upcoming Cross-Network Courses page. The credit level for a course will ultimately be determined by the local institution in a way that is consistent with comparable work done locally. The suggested credit level is based on the instructor' recommendation and a general guideline of one credit being equivalent to approximately 12-15 hours of classroom time, direct instructional time, or the equivalent.

To receive credit, students should work with their local <u>CIRTL Network campus leaders</u> or advisors to receive independent study or other credit through their local institution. Credits offered by each host campus may vary.

From: Graves, William R [G COL]

Sent: Thursday, February 04, 2016 4:59 PM

To: Strand, Judith K [G COL] < istrand@iastate.edu>

Subject: FW: CIRTL MOU?

FYI. I scanned this quickly. I may have missed something, but I don't think this says anything about us accepting other institutions' faculty members as equivalent to our graduate faculty, or anything about other issues we discussed yesterday. What do you think?

William R. Graves
Associate Dean - Graduate College
1137 Pearson Hall, Iowa State University
Ames, IA 50011-2206

From: <Ogilvie>, Craig Ogilvie <<u>cogilvie@iastate.edu</u>>

Date: Thursday, February 4, 2016 at 4:09 PM

To: "Graves, William R [G COL]" <<u>graves@iastate.edu</u>>, "Bender, Holly S [CELT]"

<a href="mailto:hbender@iastate.edu>
Subject: FW: CIRTL MOU?

FYI

From: Kitch BARNICLE [mailto:kabarnicle@wisc.edu]

Sent: Thursday, February 04, 2016 4:04 PM

To: Ogilvie, Craig A [PHYSA] < cogilvie@iastate.edu> **Cc:** Bryant, Penni A [SVPP] < pabryant@iastate.edu>

Subject: Re: CIRTL MOU?

Hi Craig,

Attached.

-kitch

From: "Ogilvie, Craig A [PHYSA]" < cogilvie@iastate.edu>

Date: Thursday, February 4, 2016 at 3:40 PM **To:** Kitch Barnicle < <u>kabarnicle@wisc.edu</u>>

Cc: "Bryant, Penni A [SVPP]" < pabryant@iastate.edu>

Subject: CIRTL MOU?

Kitch

Is there a CIRTL MoU that ISU has signed? If there is, can you send a copy? I can't find a copy in my records

Thanks

Craig

Prof Craig Ogilvie

Morrill Professor and Assistant Dean of the Graduate College

ISU-HHMI Project Director A327 Zaffarano Hall Physics, ISU Ames, IA 50011 515-294-2219











From: Bovenmyer, Karen M [CELT]
To: Strand, Judith K [G COL]

Subject: Re: Sections for Gr St 588? Gr St 590?

Date: Friday, January 08, 2016 4:04:19 PM

Judy,

CIRTL has a curriculum committee that maintains the standards for the network. The courses are taught by faculty at CIRTL member Ph.D.-granting institutions such as Cornell, Boston University, Vanderbilt etc. and these faculty recommend an amount of credit to be accepted for a course—it is up to each institutional member of the network (ISU etc) if they will accept that recommendation. Institutional co-leaders (Craig Ogilvie and Karen Bovenmyer) have access to the course information and can decide if a CIRTL course being offered is of sufficient academic rigor to be awarded graduate credit via ISU.

As a contributing member of CIRTL, Iowa State is very much an active member of this network and has input into courses offered and what those courses contain.

Does that help?

--

Karen Bovenmyer, MFA

Program Coordinator, Center for Excellence in Learning and Teaching Institutional Co-leader, Center for the Integration of Research, Teaching and Learning Iowa State University

3024 Morrill Hall

Ames, Iowa 50011-2170 Phone: 515-294-4065 Fax: 515-294-1860

kbovenmyer@iastate.edu http://www.celt.iastate.edu

From: "Strand, Judith K [G COL]" < <u>istrand@iastate.edu</u>>

Date: Friday, January 8, 2016 at 3:41 PM **To:** Karen Bovenmyer < melig@iastate.edu > **Subject:** RE: Sections for Gr St 588? Gr St 590?

Hi Karen,

Would one of you be able to attend for a little bit? The GCCC would like more information about the CIRTL classes and how they would be evaluated for Graduate Credit. The committee had questions regarding the courses being taught by someone not associated with ISU and a grade being administered by an ISU professor who was not involved with the class. How are the standards for CIRTL classes developed? Some of the classes not offered for credit on the CIRTL website were listed by ISU for graduate credit.

If no one can attend, any information you could provide in writing would be helpful.

Thanks, Judy

From: Bovenmyer, Karen M [CELT] **Sent:** Friday, January 08, 2016 3:33 PM

To: Strand, Judith K [G COL] < jstrand@iastate.edu >; Bender, Holly S [CELT] < hbender@iastate.edu >

Cc: Guddall, Ann A [G COL] aguddall@iastate.edu **Subject:** Re: Sections for Gr St 588? Gr St 590?

Judith, how should we proceed, since we will not be able to attend Tuesday's meeting?

--

Karen Bovenmyer, MFA

Program Coordinator, Center for Excellence in Learning and Teaching Institutional Co-leader, Center for the Integration of Research, Teaching and Learning

Iowa State University 3024 Morrill Hall

Ames, Iowa 50011-2170 Phone: 515-294-4065 Fax: 515-294-1860

kbovenmyer@iastate.edu http://www.celt.iastate.edu

From: Karen Bovenmyer < melig@iastate.edu > Date: Tuesday, December 8, 2015 at 3:40 PM

To: "Strand, Judith K [G COL]" < <u>istrand@iastate.edu</u>>, Holly Bender < <u>hbender@iastate.edu</u>>

Cc: "Guddall, Ann A [G COL]" < aguddall@iastate.edu>

Subject: Re: Sections for Gr St 588? Gr St 590?

Oops—Holly and I are teaching Gr St 586 during that time (Tuesdays Jan 12-April 26 from 3-6pm).

--

Karen Bovenmyer, MFA

Program Coordinator, Center for Excellence in Learning and Teaching

Institutional Co-leader, Center for the Integration of Research, Teaching and Learning

Iowa State University

3024 Morrill Hall

Ames, Iowa 50011-2170 Phone: 515-294-4065

Fax: 515-294-1860

kbovenmyer@iastate.edu http://www.celt.iastate.edu

From: Karen Bovenmyer < melig@iastate.edu>

Date: Tuesday, December 8, 2015 at 10:49 AM

To: "Strand, Judith K [G COL]" < istrand@iastate.edu >, Holly Bender < hbender@iastate.edu >

Cc: "Guddall, Ann A [G COL]" < aguddall@iastate.edu >

Subject: Re: Sections for Gr St 588? Gr St 590?

Great, we will attend.

--

Karen Bovenmyer, MFA

Program Coordinator, Center for Excellence in Learning and Teaching

Institutional Co-leader, Center for the Integration of Research, Teaching and Learning

Iowa State University

3024 Morrill Hall

Ames, Iowa 50011-2170 Phone: 515-294-4065 Fax: 515-294-1860

kbovenmyer@iastate.edu http://www.celt.iastate.edu

From: "Strand, Judith K [G COL]" < jstrand@iastate.edu>

Date: Tuesday, December 8, 2015 at 10:46 AM

To: Karen Bovenmyer < melig@iastate.edu >, Holly Bender < hbender@iastate.edu >

Cc: "Guddall, Ann A [G COL]" < aguddall@iastate.edu >

Subject: RE: Sections for Gr St 588? Gr St 590?

Karen and Holly,

The GCCC discussed the requests for classes last week. They would like Holly to attend the meeting in January and provide more about the CIRTL classes and how they are evaluated to be used as ISU classes. The next meeting will be January 12, 3:30 p.m. in 1102 Pearson Hall. I'll send you a notice closer to the meeting date.

Thanks, Judy

From: Bovenmyer, Karen M [CELT]

Sent: Monday, December 7, 2015 4:20 PM

To: Guddall, Ann A [G COL] aguddall@iastate.edu cc: Strand@iastate.edu

Subject: Sections for Gr St 588? Gr St 590?

Hi Ann and Judith,

I have students wanting to sign up for CIRTL credits for Gr St 588—do we have a status on creating Gr St 590 for CIRTL credits? Or should I register them for Gr St 588? Do you have which section is which for Gr St 588?

--

Karen Bovenmyer, MFA

Program Coordinator, Center for Excellence in Learning and Teaching
Institutional Co-leader, Center for the Integration of Research, Teaching and Learning
Iowa State University
3024 Morrill Hall
Ames, Iowa 50011-2170

Phone: 515-294-4065 Fax: 515-294-1860

kbovenmyer@iastate.edu http://www.celt.iastate.edu

Strand, Judith K [G COL]

From: Strand, Judith K [G COL]

Sent: Wednesday, November 11, 2015 2:09 PM

To: Graves, William R [G COL]

Subject: RE: Adding Gr St 590A,B,C for Spring 2016

The information I found talks mostly about establishing a network of universities for professional development related to STEM teaching and research. They also talk about utilizing the MOOC network to do this. Nothing mentions graduate credit.

http://www.cirtl.net/files/CIRTLfortheNation2015.pdf

Here's a snip-it.

The mission of the Center for the Integration of Research, Teaching and Learning (CIRTL) is: To enhance excellence in undergraduate education through the development of a national faculty committed to implementing and advancing effective teaching practices for diverse learners as part of successful and varied professional careers. In short, CIRTL seeks to produce a national STEM faculty who are both skilled researchers and excellent teachers, and who will be able to succeed at their desired balance of the two in careers across the landscape of higher education. To fulfill this mission, CIRTL has developed, implemented, and evaluated successful strategies for preparing future faculty for careers that integrate research, teaching, and learning. Three core ideas (www.cirtl.net/CoreIdeas) provide the conceptual framework for all that CIRTL does: • Teaching-as-Research (TAR) is the deliberate, systematic, and reflective use of research methods by STEM instructors to develop and implement teaching practices that advance the learning experiences and outcomes of all students. • Learning Communities (LC) bring together groups of people for shared learning, discovery, and generation of knowledge. To achieve common learning goals, a learning community nurtures functional relationships among its members. • Learning-through-Diversity (LtD) capitalizes on the rich array of experiences, backgrounds, and skills among STEM undergraduates and graduates-through-faculty to enhance the learning of all. It recognizes that excellence and diversity are necessarily intertwined. The CIRTL Network connects universities building on the CIRTL ideas to prepare the national STEM faculty. Shared ideas among Network universities allow each institution to more rapidly advance opportunities and effectively use resources. Shared learning of Network graduate students better prepares them for the diverse teaching and research settings that they will encounter in their careers. And shared action better positions Network universities for funding and national impact. Each university in the CIRTL Network (www.cirtl.net) develops, implements, and evaluates a local CIRTL learning community and associated programs for STEM future faculty3 on its campus. These learning communities all share the CIRTL core ideas, but each is uniquely innovative in ways that reflect the wide variety of campus cultures, missions, students and circumstances. The local learning communities are the foundation of all that is CIRTL. Each university also contributes to a cross-Network learning community. These programs allow the future faculty on every campus to draw on the rich diversity of the Network universities. Much of this cross-Network learning community happens online, and we envision steadily expanding connectivity of CIRTL Network future faculty to the entire landscape of undergraduate institutions

Judy Strand

Graduate College 1137 Pearson Hall Iowa State University

jstrand@iastate.edu 515-294-5285 From: Graves, William R [G COL]

Sent: Wednesday, November 11, 2015 1:48 PM

To: Strand, Judith K [G COL]

Subject: Re: Adding Gr St 590A,B,C for Spring 2016

Judy,

I share your concerns. I thought CIRTL offered professional-development opportunities that students could participate in voluntarily as an option to broaden their backgrounds. I was not aware of the intent to give lowa State credit for CIRTL programming. In that sense, I see CIRTL as different from GP-IDEA. It sounds like the instructor of record will have no direct involvement in the determination of a grade, which seems wrong. I totally agree with each of your concerns. You might check the CIRTL web site just to see how they are describing what the offer. Do they claim that their workshops lead to graduate credit from participating schools? I would not want to see GCCC approve this without very strong scrutiny.

Bill

William R. Graves
Associate Dean - Graduate College
1137 Pearson Hall, Iowa State University
Ames, IA 50011-2206

From: <Strand>, "Judith K [G COL]" < istrand@iastate.edu>

Date: Wednesday, November 11, 2015 at 1:40 PM **To:** "Graves, William R [G COL]" < graves@iastate.edu>

Subject: Adding Gr St 590A,B,C for Spring 2016

Bill,

I had a few questions after looking at this Experimental Course request. I plan on running it by GCCC, but wanted to get your input, if you have time. If not, I'll check with GCCC.

- 1. I don't have a lot of knowledge about CIRTL, so this may be OK, but the statement, "Student work will be tracked by the instructor of the CIRTL course and reported to CIRTL central. The earned grade will then be reported to the instructor of record here at ISU (Holly Bender)," concerned me.
- 2. When I looked up the link to the classes, some of them said, "Not available for credit" but they are listed in the choices students can choose for ISU credit. Some are marked "optional credit"
- 3. One of the CIRTL classes is a MOOC, available for anyone to take.
- 4. I'm not sure these classes should be offered for grades, A F.

Thanks,

Judy Strand

Graduate College 1137 Pearson Hall Iowa State University

jstrand@iastate.edu 515-294-5285

From: Bovenmyer, Karen M [CELT]

Sent: Wednesday, November 11, 2015 9:05 AM

To: Hulsebus, Char [REC]

Cc: Strand, Judith K [G COL]; Berg, Kara J [REC] **Subject:** Re: Adding Gr St 590A,B,C for Spring 2016

Thank you very much. I have submitted the proposal (as pasted below).

New Experimental Course Proposal

Date Submitted: 11/11/15 9:04 am

Viewing: GR ST 590X : Center for the Integration of Research, Teaching and Learning Special Topics

Last edit: 11/11/15 9:04 am

Last edited by: melig

Changes proposed by: melig

Department

Graduate Studies (GR ST)

Catalog Year

2015-2016

First Expected

Offering Term

Spring

Instructor

Holly Bender

Title

Center for the Integration of Research, Teaching and Learning Special Topics

Transcript Title

CIRTL

Major Teaching

Department

GR ST

Cross Listed Courses

Dual Listed Course

Credit Hour Details

Credit Type

C

Variable

Grading Method

A-F

Instruction Type

Instruction Type

Instruction Type

pe
Wed

Independent Study

VAI

Repeatable?

Maximum Repeat

Yes

Semesters Offered

Fall

Yes

Spring

Yes

Summer Yes

Prerequisites Permission of instructor.

Description Study in topics providing academic professional development through the Center for the Integ

Teaching and Learning.

Graduation Restrictions

> Meets U.S. Diversity Requirement No

Meets International Perspective

No

Syllabus & Supporting Documentation

Reason for proposal

(programmatic justification, need for course, intended use, etc.)

Offerings from the Center for the Integration of Research, Teaching and Learning were previous section of Gr St 588 but this has lead to confusion with the on-campus Gr St 588 so a differen

Course outcomes/objective

This course will allow students to participate in CIRTL programming for credit. Programatic courses in teaching and future faculty professional development, particularly for teaching in S conducting teaching-as-research projects.

(attach syllabus if required by your college/department)

Course content/major Variable per the CIRTL course or project. Current courses may be viewed here: topics to be addressed http://www.cirtl.net/courses/semesterofferingscurrent and include the following topics: Teaching with Technology, Diversity in the College Classroom: Teaching the STEM Undergr STEM Classrooms: Introduction to Pedagogy and Practice, Developing a Teaching Portfolio, Evaluation Plans (Short Course), Students Reading Real Science: Bringing Primary Literature Classroom (Short Course), CIRTL MOOC: An Introduction to Evidence-Based Undergraduat

Assessment Plans: Mechanism for assessing student mastery of course outcomes/objectives

Student work will be tracked by the instructor of the CIRTL course and reported to CIRTL ce then be reported to the instructor of record here at ISU (Holly Bender).

Relationship of this course to existing courses in other departments and

New.

programs (supporting, overlap, etc.)

Consultation with Judy Strand revealed we should have three sections of this course A, B, C:

Results of consultation with and programs

relevant departments Short title: GR ST 590 CIRTL

Long title: GR ST 590 Center for the Integration of Research, Teaching and Learning Special Description: Cr. 1-3. Repeatable. F.S. Prereq: Permission of instructor. Study in topics provide development through the Center for the Integration of Research, Teaching and Learning.

Meets: 1/11/2016 – 05/06/2016

Gr St 590A CIRTL PEDAGOGY

Additional description: Topic: Pedagogy.

Gr St 590B CIRTL PROF DEV

Additional description: Topic: Professional Development.

Gr St 590C CIRTL TAR

Additional description: Topic: Teaching-As-Research.

Course reviewer comments

Karen Bovenmyer, MFA

Program Coordinator, Center for Excellence in Learning and Teaching

Institutional Co-leader, Center for the Integration of Research, Teaching and Learning

Iowa State University

3024 Morrill Hall

Ames, Iowa 50011-2170

Phone: 515-294-4065

Fax: 515-294-1860

kbovenmyer@iastate.edu

http://www.celt.iastate.edu

From: "Hulsebus, Char [REC]" < cchulse@iastate.edu>
Date: Wednesday, November 11, 2015 at 8:53 AM

To: Karen Bovenmyer < melig@iastate.edu >

Cc: "Strand, Judith K [G COL]" < istrand@iastate.edu >, "Berg, Kara J [REC]" < kjberg@iastate.edu >

Subject: RE: Adding Gr St 590A,B,C for Spring 2016

Hello Karen:

Since GR ST 590 is not in the catalog, it must be submitted to the experimental course system https://nextcatalog.registrar.iastate.edu/cimx/. You will need your ISU net ID and password to sign in. The approval workflow includes Bill Graves, associate dean of the Graduate College.

You can edit GR ST 588 for the 2017 catalog starting February 2016. More information about catalog editing is available from http://www.registrar.iastate.edu/catalog-editing

Let me know if you have additional questions.

Char

From: Bovenmyer, Karen M [CELT]

Sent: Tuesday, November 10, 2015 4:50 PM **To:** Hulsebus, Char [REC] < cchulse@iastate.edu>

Cc: Strand, Judith K [G COL] < istrand@iastate.edu >; Guddall, Ann A [G COL] < aguddall@iastate.edu >; Hotchkiss, Barbara

J [REC] < bjhotch@iastate.edu>; Bender, Holly S [CELT] < hbender@iastate.edu>

Subject: Adding Gr St 590A,B,C for Spring 2016

Dear Char,

In coordination with the Graduate College, we would like to add the following Gr St 590ABC courses to the catalog.

Short title: GR ST 590 CIRTL

Long title: GR ST 590 Center for the Integration of Research, Teaching and Learning Special Topics

Description: Cr. 1-3. Repeatable. F.S. Prereq: Permission of instructor. Study in topics providing academic professional

development through the Center for the Integration of Research, Teaching and Learning.

Meets: 1/11/2016 - 05/06/2016

Gr St 590A CIRTL PEDAGOGY

Additional description: Topic: Pedagogy.

Gr St 590B CIRTL PROF DEV

Additional description: Topic: Professional Development.

Gr St 590C CIRTL TAR

Additional description: Topic: Teaching-As-Research.

These courses will replace having three sections of Gr St 588, which we would like to reduce to one section.

Thanks very much for your time,

Karen

Karen Bovenmyer, MFA
Program Coordinator, Center for Excellence in Learning and Teaching
Institutional Co-leader, Center for the Integration of Research, Teaching and Learning
Iowa State University
3024 Morrill Hall
Ames, Iowa 50011-2170
Phone: 515-294-4065

Fax: 515-294-1860

kbovenmyer@iastate.edu http://www.celt.iastate.edu