Environmental Science’s
DRAFT response to UCCLE’s request for clarification of
a DRAFT plan for meeting guidelines to develop graduates’ skill in
Discipline-Specific Spoken, Visual, and Written Communication

The Department of Crop and Soil Environmental Sciences offers the Bachelors of
Science degree for two majors. This describes a ViEWS plan for the major in Environmental
Science (ENSC). We separately describe a ViEWS plan for the major in Crop and Soil
Environmental Sciences (CSES).

Within the ENSC major, there are four approved options, and all ENSC majors must
enroll in at least one option to meet graduation requirements. In addition to 78 credit hours of
general requirements (to include those for the University’s Curriculum for Liberal Education),
each option has at least 36 credit hours of coursework specific to the option. Option-specific
courses come from within the Department and from other associated departments and majors on
campus. The four options are:

- Aquatic Resources
- Land Resources
- Plant Resources
- Waste Management

The spoken, visual, and written requirements are met through a communication across-
the-major approach as well as by incorporating at least two writing-intensive courses. Students
write, speak, and/or communicate with visual media and get to see such modes patterned in
nearly every class in the major. Furthermore, the variety of assignments ensure that students
graduating in ENSC are proficient in writing and speaking to technical as well as popular
audiences and in using visual media that are appropriate to their audiences.

**Goals:** Students who graduate in ENSC will be able to:

- Communicate clearly and effectively in writing and by speaking to technical
  audiences and a variety of non-technical audiences (ranging from children to
  adults and from interested citizens to policy makers).
- Employ effective and appropriate visual communication techniques that
  complement their writing and speaking.
- Employ a wide variety of written and oral communication techniques (as well
  as accompanying visual communication tools) that are appropriate to their
  intended audiences.

**Objectives:** Upon completion of the Bachelors of Science degree in ENSC, the student
will be able to:

1. Describe and explain scientific principles and results of research in a variety of technical
formats, including but not limited to, journal-quality manuscripts, technical reports, and reports of laboratory investigations.

2. Describe and explain scientific principles and results of research in a variety of non-technical formats, including but not limited to, executive briefs, newspaper articles, popular magazine articles, and opinion-editorials.

3. Effectively portray data in tabular and graphic formats to support both technical and non-technical publications.

4. Design and deliver effective presentations for both technical and non-technical audiences in either oral or poster format.

5. Effectively utilize graphics, photographs, and other visual media to support oral and poster presentations.

**Implementation – Environmental Science:** Communication objectives in ENSC will be met in the following suite of courses required in the major and/or by the College of Agriculture and Life Sciences, all of which have components that provide students significant opportunities to pattern and to practice visual, written, and spoken communication:

1. AAEC 1005 – Economics of Food and Fiber System (microeconomics)
2. AAEC 1006 – Economics of Food and Fiber System (macroeconomics)
3. CSES 1004 – Intro to Crop and Soil Environmental Sciences (freshman year)
4. CSES/ENSC 3114 – Soils
5. CSES/ENSC 3124 – Soils Lab
6. ENSC 3604 – Fundamentals of Environmental Science
7. ENSC 3634 – Physics of Pollution
8. ENSC 4004 – Senior Seminar (Writing Intensive)
9. ENGL 3764 – Technical Writing (Writing Intensive)
10. STAT 3615 – Biological Statistics

In addition to these major-wide requirements, some of the specific ENSC options require other coursework in the Department of Crop and Soil Environmental Sciences. The following options include CSES/ENSC coursework rich in visual, written, and/or spoken communication but not shown above:

- **Aquatic Resources**
  CSES/ENSC 4164 – Environmental Microbiology
- **Land Resources**
  CSES 4124 – Soil Survey and Taxonomy
  CSES/ENSC 4844 – Soil Interpretation Using GIS and DSS
- **Plant Resources**
  CSES/ENSC 3644 – Plants for Environmental Restoration
- **Waste Management**
  CSES/ENSC 4164 – Environmental Microbiology
  CSES/ENSC 4734 – Environmental Soil Chemistry
Throughout this suite of courses, students write a wide variety of technical and non-technical articles, reviews of case studies, and analyses of scientific data to support hypothesis-based results. Written feedback is provided to the students for required assignments either directly on the submitted assignment or in an attached document. Students also make presentations (both technical and non-technical) in multiple classes, employing a variety of visual media. Presentations range from brief summaries of class projects to reports of laboratory scientific investigation to analyses of field data. Students use increasingly sophisticated analysis and graphical displays to support their writing and speaking as they progress through the curriculum. Both team and individual presentations are made.

**Assessment:**

We will assess outcomes associated with this Spoken, Visual, and Written Communication Requirement in our curricula via several mechanisms:

1. Graduating student exit interviews will specifically refer to the communication requirement.
2. Through the assessment procedures employed for the Department by the University through the Assessment Office.
3. Through periodic surveys of employers of our graduates. The surveys will ask employers to rate the performance of graduates of our program on all items related to the objectives listed above.
4. Via class-specific course evaluations that will include questions regarding the communications requirement.