1. New Course – Revised as requested by Faculty Senate

**SCSC 458. Watershed and Water Quality Management.** *(3-0). Credit 3.* Land use impact on surface and ground water chemistry; legislation impacting water quality; surface and groundwater impairment and restoration. Prerequisite: CHEM 101 or equivalent or approval of instructor; junior or senior classification.
Texas A&M University

Departmental Request for a New Course

Undergraduate • Graduate • Professional

Submit original form and attach a course syllabus.

1. This request is submitted by the Department of _____ Soil and Crop Sciences ______

2. Course prefix, number and complete title of course: SCSC 458 Watershed and Water Quality Management

3. Catalog course description (not to exceed 50 words): Land use impact on surface and ground water chemistry; legislation impacting water quality; surface and groundwater impairment and restoration.

4. Prerequisite(s): CHEM 101 or Equivalent or Permission of Instructor; Junior or Senior Classification

Cross-listed with: ____________

Cross-listed courses require the signature of both department heads.

5. Is this a variable credit course? □ Yes □ No If yes, from ________ to ________

6. Is this a repeatable course? □ Yes □ No If yes, this course may be taken ________ times.

Will this course be repeated within the same semester? □ Yes □ No

7. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   B.S. in AGRO and PSSC

8. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

9. Prefix Course # Title (excluding punctuation)

   \[
   \begin{array}{ccccccccccc}
   \text{S} & \text{C} & \text{S} & \text{C} & \text{4} & \text{5} & \text{8} & \text{W} & \text{A} & \text{T} & \text{E} & \text{R} & \text{S} & \text{H} & \text{E} & \text{D} & \text{&} & \text{W} & \text{T} & \text{R} & \text{Q} & \text{U} & \text{A} & \text{L} & \text{M} & \text{G} & \text{M} & \text{T} \\
   \text{Lect.} & \text{Lab} & \text{SCH} & \text{CIP and Fund Code} & \text{Admin. Unit} & \text{Acad. Year} & \text{FICE Code} \\
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   \end{array}
   \]

Approval recommended by:

Wayne Smith for David Baltensperger

Department Head - Type Name & Sign Date

Chair, College Review Committee Date

Department Head - Type Name & Sign (if cross-listed course)

Date

Dean of College Date

Submit to Coordinating Board by:

Associate Director, Curricular Services Date

Effective Date

As corrected; see attached original for signatures.

Attachment I

By Curricular Services at 5:03 pm, Feb 02, 2010

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
Texas A&M University

Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and attach a course syllabus.

1. This request is submitted by the Department of:
   Soil and Crop Sciences

2. Course prefix, number and complete title of course:
   SCSC 458 Land Use and Water Quality Management

3. Catalog course description (not to exceed 50 words):
   Land use impact on surface and ground water chemistry; legislation impacting water quality; surface and groundwater impairment and restoration.

4. Prerequisite(s):
   CHEM 101 or Equivalent or Permission of Instructor; Junior or Senior Classification

5. Is this a variable credit course?  □ Yes  ❌ No
   If yes, from _____ to _____

6. Is this a repeatable course?  □ Yes  ❌ No
   Will this course be repeated within the same semester?  □ Yes  ❌ No
   If yes, this course may be taken _____ times.

7. This course will be:
   a. required for students enrolled in the following degree programs(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   B.S. in AGRO and PSSC

8. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

9. Prefix: Course # Title (excluding punctuation)

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</table>

Approval recommended by:

Wayne Smith for David Baltensperger
Department Head - Type Name & Sign Date

Chair, College Review Committee

Dean of College

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu

Curricular Services – 3/09
SYLLABUS – Undergraduate
Stacked with graduate course
SCSC 458 Watershed and Water Quality Management
Spring Semester 20XX
3 credit hours

Aggie code of honor: “Aggies do not lie, cheat or steal, nor do they tolerate those who do”.
http://www.tamu.edu/aggiehonor

Professor: Dr. Jacqueline Aitkenhead-Peterson, 620 Heep Center, Telephone 979-845-3682,
Email Address: jpeterson@ag.tamu.edu

Schedule:
Lectures: Tuesdays and Thursdays – 11:10 – 12:25 pm Heep Center Room 124
Office Hours:
620 Heep Center: Tuesdays and Thursdays 1 pm – 3 pm. Additional times by appointment.

Course Description
Land use impact on surface and ground water chemistry; legislation impacting water quality;
surface and groundwater impairment and restoration.

The course will examine: a) Factors within the watershed which include geology, vegetation,
climate and topography that result in specific surface water chemistry; b) How land use and
management practices alter watershed soil processes and consequently ground and surface water
chemistry; c) State, national and international policies to maintain surface water chemistry to
standards for protected and beneficial uses; d) Best management practices (BMP’s) for surface
water chemistry and e) Regional and global impacts on surface water chemistry.

Prerequisites:
CHEM 101 or equivalent or permission of instructor; Junior or Senior Classification.

Course Objectives:
• Understand how to manage land use for surface water quality.
• Learn how best management practices solve problems involved in surface water
  chemistry impairments.
• Know state, national and international policies on surface water chemistry
• Understand the concept of “Integrated Water Resource Management”
• Proficiency in problem solving in water quality management
• Proficiency in the examination of surface water chemistry databases to determine
  where and what in the watershed might be causing an impairment
Course Structure: The course will consist of lectures and discussions. Although many examples will involve local and national water quality problems, approximately 50% of the course will examine international water quality issues.

Text: There is no text book for this course; peer reviewed published papers and government agency reports will be used. The readings are intended as background in the most part, to strengthen concepts taught in class. Certain papers will be selected for further discussion in class. Readings, lecture notes and presentations are available at: http://elearning.tamu.edu

Test Review Sessions: We will cover past exam questions and answers and clarify any concepts that you are not sure of one week before each exam.

Class participation: Students will be expected be prepared for each class and to participate in class discussions. All questions and points of view are welcomed, and disagreement and debate are expected.

Grading:
- Test I: 25%
- Test II: 25%
- Paper/Presentation: 10%
- Review Essay 15%
- Final exam (cumulative): 25%

Grade Scale:
- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 60 – 69
- F = < 60

Grading Policy: Completion of assignments and participation in all activities of the class are the responsibility of the student. Therefore, it is the responsibility of the student to present a valid reason, such as a signed medical excuse from a doctor, to be given consideration in the assessment of timeliness and submission of assignments. Assignments not returned will be given a grade of zero. Attendance and approved absence are covered in the University Student Rules (http://student-rules.tamu.edu) and will be followed.

Lecture schedule

<table>
<thead>
<tr>
<th>Lecture No.</th>
<th>Lecture</th>
<th>Reading and Reference Material</th>
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</table>
| 1           | Introduction: logistics, goals and overview of the course | EPA 2000  
Perry and Vanderklein 1996 |
<p>| 3           | EPA standards: Chemical and Physical Indicators of WQ | Cole 1994; EPA_DW-Standards 1999; Goldman and Horne 1983; EPA 2002 |
| 4           | Biological Indicators | Guest Lecture: Dr. Terry Gentry |
| 5           | History of Clean Water Acts (UK) | TCEQ 2005; Texas 303d lists; CWA |</p>
<table>
<thead>
<tr>
<th>6</th>
<th>The TMDL Processes</th>
<th>Guest Lecture: Kevin Wagner Associate Director of TWRI</th>
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<tr>
<td>7</td>
<td>Nitrogen: Source, Transformation and Fate</td>
<td>Atlas and Bartha 1987; Malakoff 1998</td>
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<tr>
<td>8</td>
<td>Phosphorous: Source, Transformation and Fate</td>
<td>Montana State University Extension 2000; Correll 1998; Gleick 1993; Carpenter et al. 1998</td>
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<tr>
<td>9</td>
<td>Carbon: Allochthonous sources of carbon and nitrogen</td>
<td>Aitkenhead-Peterson et al. 2003; Lavesque and Ayotte 2002</td>
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<tr>
<td>10</td>
<td>Organo-metal interactions in surface waters</td>
<td>Guest Lecture: Dr. Bhajan Biswas</td>
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<tr>
<td>11</td>
<td>Case Study: Discussion</td>
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<td>12</td>
<td>Urbanization: Construction, Turfgrass, Neighborhoods and landscape plantings – effect on water chemistry. BMP’s</td>
<td>Winter and Dillon 2006; Dietz and Clausen 2005</td>
</tr>
<tr>
<td>13</td>
<td>Urbanization – Storm runoff chemistry. BMP’s</td>
<td>NRDC Paper; Hogan and Walbridge 2007; Novotny et al 2008</td>
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<tr>
<td>16</td>
<td>Irrigation water chemistry: effect on surface water chemistry through within watershed soil chemical interactions</td>
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<td>17</td>
<td>Land Management – Mining: Open pit, Strip, Quarry and Placer.</td>
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<td>No.</td>
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<td>18</td>
<td>BMP’s</td>
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<td></td>
<td>Land Management- Forestry Case studies from Europe and USA</td>
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<tr>
<td>19</td>
<td>Land Management - Riparian Zones and Buffer Strips: The chemistry behind their function. BMP’s</td>
<td>Lowrance et al 1984; TC-31</td>
</tr>
<tr>
<td>20</td>
<td>Watershed Management: Drinking waters supplies: Treatment vs Management</td>
<td>Lamb 1988; EPA 1999; EPA_MCL.</td>
</tr>
<tr>
<td>21</td>
<td>Regional Impacts: Atmospheric Deposition: Acid Rain Case studies on surface water chemistry and watershed soils from Czech Republic and Scotland</td>
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<tr>
<td>22</td>
<td>Regional Impacts: Volcanism. Case studies on the impact to surface water chemistry through direct and indirect watershed processes</td>
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<tr>
<td>23</td>
<td>Climate Change: Impact on watershed C losses to surface waters</td>
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<tr>
<td>24</td>
<td>Using Models to estimate nutrient loads in surface waters I</td>
<td>Alexander et al., 2004; Smith et al., 1997; Alexander et al., 2000; Aitkenhead &amp; McDowell 2000</td>
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<tr>
<td>25</td>
<td>Integrated Water Resource Management</td>
<td></td>
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<tr>
<td>26</td>
<td>Emerging WQ Problems: Hormones, Pharmaceuticals and PCP’s</td>
<td>Student Paper/Presentations</td>
</tr>
<tr>
<td>27</td>
<td>Course Evaluation and Final Exam Review Session</td>
<td></td>
</tr>
</tbody>
</table>

**Americans with Disabilities Act (ADA) Policy Statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides...
comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu).

**Copyright / plagiarism statement:**

“Any course packets and all other materials generated and/or used during this course are copyrighted. Because these materials are copyrighted, you do not have the right to copy the course packets, unless the instructor expressly grants permission.

As commonly defined, plagiarism consists of passing off as one’s own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot safely be communicated. If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section “Scholastic Dishonesty”.
Sandra,

I am attaching the updated requests and syllabi for the referenced courses. The name has been changed on both parts to reflect "Watershed and Water Quality Management"

Below you will find the historical e-mails pertaining to this change and the approval of the Architecture Department (highlighted).

Would you please forward to appropriate parties to be added to the FS agenda for Monday. Let me know if you need anything further.

I’m not sure of the status of the "letter". Thanks for all your help today!

Kathy

Make it a GREAT day!

Kathy Ferguson
Senior Office Associate
Soil & Crop Sciences | Instruction Programs
MEPS | Instruction Programs
Texas A&M University
TAMU 2474
Heep Center, Rm 217
Phone: 979-845-4620 | MEPS: 979-845-0532 | Fax: 979-458-0533

"Learning is ever in the freshness of its youth, even for the old." Aeschylus

Jacqui

Jacqueline Aitkenhead-Peterson
Assistant Professor of Urban Nutrient and Water Management,
Department of Soil and Crop Sciences,
620 Heep Center,
Texas A&M University,
2474 TAMU
370 Olsen Blvd.,
College Station
TX 77843

Phone:
Office: 979 845 3682
Thanks Jacqui, Dave

David,
Here is the syllabus and course request as you requested.
Jacqui

Jacqueline Aitkenhead-Peterson
Assistant Professor of Urban Nutrient and Water Management,
Department of Soil and Crop Sciences,
620 Heep Center,
Texas A&M University,
2474 TAMU
370 Olsen Blvd.,
College Station
TX 77843

Phone:
Office: 979 845 3682
Lab: 979 845 4005
Mobile: 603 833 0686
Web Pages:
http://jacquelinepeterson.tamu.edu/
http://soilcrop.tamu.edu/professors/peterson/profile.htm

Tom,
I stand corrected. I assumed that since the FS EC approved it and it
was removed at the Senate floor, it would only have to go back to the
last step in the approval process.

So, send everything to Suzie and me. It won't have to go back to our
committee. We'll hold it and put it forward with our next packet of
courses.

Jacqui,

This also means you better supply an updated Syllabus and Course form
with the correct title. It won't need signatures.

Dave

David Wm. Reed
Associate Dean for Graduate Programs
and Faculty Development
College of Agriculture and Life Sciences
109 Kleberg
Since SCSC658 was removed from the Faculty Senate agenda and returned to the GC, the proposed course with all documentation will be submitted again in the next monthly report to the Senate that Suzie prepares. It would be helpful to attach the letter in that downloadable report to assure all the documentation is intact when the Executive Committee reviews the request again. Thanks so much!

Marilyn

Marilyn Willie
Assistant to the Faculty Senate
general senate office, Texas A&m university
mwillie@tamu.edu 979-847-9033 (phone) | 979-845-6445 (fax)
107 academic building, MS 1225
College Station, TX 77843

---

**Tom,**

*The letter does not need to go to the Graduate Council. The GC already approved the courses. The objection came from the Senate floor. Hence, the letter should be addressed to the Faculty Senate, but you can copy me for filing with the GC records.*

**Dave**

David Wm. Reed
Chair, Graduate Council
Associate Dean for Graduate Programs
and Faculty Development
Dear Dean Reed,

Yes, Landscape Architecture and Urban Planning will provide a letter to the Graduate Council through Faculty Senate under Dr. Ndubisi's signature that issues of concern relating to the proposed SCSC658 class have been satisfactorily resolved.

Thank you for your patience and allowing the faculty members to sort out these issues,

Tom Woodfin

Thomas M. Woodfin  ASLA RLA PhD
Associate Dept Head and BLA Program Coordinator
Landscape Architecture & Urban Planning
College of Architecture
Texas A&M University
College Station, TX 77845-3137
tel 979.845.1079
fax 979.862.1784
e twoodfin@archmail.tamu.edu

From: Reed, David W
Sent: Monday, December 21, 2009 2:38 PM
To: 'Li, Ming-Han'
Cc: Huval, Lynette; Brynildsen, Susy; JPeterson@ag.tamu.edu; Tassinary, Lou; Ndubisi, Forster; Van Zandt, Shannon; Willie, Marilyn Y
Subject: RE: GC Courses Returned

2/2/2010
Ming-Han,

Dr. Peterson agrees to the change in title. The Faculty Senate will need a letter from Dr. Ndubisi, Head. I assume it should be sent to Marilyn Willie, mwillie@tamu.edu

David Wm. Reed
Associate Dean for Graduate Programs and Faculty Development
College of Agriculture and Life Sciences
109 Kleberg
Texas A&M University
College Station, TX 77843-2402
Professor of Horticulture
Texas A&M University
Dept. of Horticultural Sciences
403 Horticulture Bldg.
College Station, TX 77843-2133
E-mail: dwreed@tamu.edu

Phone: 979-458-0710 Kleberg
Phone: 979-845-0139 Horticulture
Cell: 979-777-2750 World-Wide!
Fax: 979-845-6083 Kleberg
Fax: 979-845-0627 Horticulture
Web Bio: hort201.tamu.edu/prof/

From: Li, Ming-Han [mailto:MingHan@tamu.edu]
Sent: Monday, December 21, 2009 10:36 AM
To: Reed, David W; Tassinary, Lou; JPeterson@ag.tamu.edu; Woodfin, Tom; Ndubisi, Forster; Van Zandt, Shannon
Cc: Huval, Lynette; Brynildsen, Susy
Subject: RE: GC Courses Returned

Dave,

After communicating with Dr. Peterson, I am in support of the revised course title "Watershed and Water Quality Management" for the proposed course SCSC 658. By reviewing the syllabus, this new course covers important subjects that will be of great interest to students in many disciplines. I am glad that Dr. Peterson is able to make it a permanent course and graciously revises the title to address our concern. At this point, although I cannot officially speak for Drs. Ndubisi and Woodfin, I don't foresee concerns that would come from our department.

Best Regards,

Ming-Han

------------------------------------------------------
Ming-Han Li, Ph.D., P.E., R.L.A.
Associate Professor of Landscape Architecture
Texas A&M University
Tel. 1-979-845-7571

2/2/2010
From: Reed, David W [mailto:dwreed@tamu.edu]
Sent: Tuesday, December 15, 2009 1:46 PM
To: Li, Ming-Han; Tassinary, Lou; jPeterson@ag.tamu.edu; Woodfin, Tom; Ndubisi, Forster
Cc: Huval, Lynette; Brynildsen, Susy
Subject: FW: GC Courses Returned

The is a follow-up to my call to Tom Woodfin and Minghan Li relative to SCSC 658 Land Use and Water Quality Management.

It appears as though the conflict centers around "Land Use", and how that term might be applied similarly and differently from a landscape and urban planning perspective in contrast to an agricultural perspective.

The Landscape and Urban Planning faculty are going to discuss the issue and try to get back to Dr. Peterson and me before the holidays relative to possible changes in SCSC that would allow it to be removed from table.

We will need a Memo from Dr. Forster Ndubisi, Head LAUP, stating what needs to be done to avoid possible overlap. I will work with Dr. Peterson to modify any wording needed on the course request and syllabus, and with Suzie Brynildsen in OGS to process the paperwork appropriately. An email Memo would suffice.

Dr. Minghan, thanks for your explanation and effort.

Dave

David Wm. Reed
Chair,
Universtiy Graduate Council
Associate Dean for Graduate Programs and Faculty Development
College of Agriculture and Life Sciences
109 Kleberg

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E-mail: dwreed@tamu.edu<mailto:dwreed@tamu.edu>

Phone: 979-458-0710 Kleberg
Phone: 979-845-0139 Horticulture
Cell: 979-777-2750 World-Wide!
Fax: 979-845-6083 Kleberg
Fax: 979-845-0627 Horticulture
Web Bio: hort201.tamu.edu/prof/

From: Suzie Brynildsen [mailto:SBrynildsen@vprmail.tamu.edu]
The Faculty Senate met yesterday and pulled 2 courses to return to the GC. They both need letters of support from Architecture. These 2 courses were not approved yesterday.

AERO 609      Sustainability Metrics and Life Cycle Assessment
SCSC 658      Land Use and Water Quality Management

Thanks,

Vanessa

Vanessa foster  faculty senate office,  Texas A&m university
979-458-3014 (phone)  |  979-845-6445 (fax)  |  vfoster@tamu.edu