A. **Academic Division:** Business, Technology and Workforce

B. **Discipline:** Information Technology – Software Development

C. **Course Number and Title:** ITEC2830 – Open Source Web Applications

D. **Course Coordinator:** Douglas Kranch
   **Assistant Dean:** Daniel Wagner

**Instructor Information:**
- **Name:** Click here to enter text.
- **Office Location:** Click here to enter text.
- **Office Hours:** Click here to enter text.
- **Phone Number:** Click here to enter text.
- **E-Mail Address:** Click here to enter text.

E. **Credit Hours:** 3
   - Lecture: 2 hours
   - Laboratory: 2 hours

F. **Prerequisites:** ITEC1850 (minimum grade of C- required), ITEC1870 (minimum grade of C- required), ITEC1890 (minimum grade of C- required), MATH1030 (minimum grade of C- required)

G. **Syllabus Effective Date:** Fall, 2017

H. **Textbook(s) Title:**
   - *PHP & My SQL Web Development*
     - **Author:** Welling, Luke, and Thomson
     - **Copyright Year:** 2009
     - **Edition:** 4th
     - **ISBN #:** 0-672-32916-6

I. **Workbook(s) and/or Lab Manual:** None

J. **Course Description:** This course covers the implementation of a web-based database using search software with a relational database, and a programming language to tie the two together. Emphasis is on using software that is freely available. Current software includes Apache Server, MySQL, and PHP.

K. **College-Wide Learning Outcomes:**

<table>
<thead>
<tr>
<th>College-Wide Learning Outcome</th>
<th>Assessments - - How it is met &amp; When it is met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication – Written</td>
<td></td>
</tr>
<tr>
<td>Communication – Speech</td>
<td></td>
</tr>
<tr>
<td>Intercultural Knowledge and Competence</td>
<td></td>
</tr>
<tr>
<td>Critical Thinking</td>
<td></td>
</tr>
<tr>
<td>Information Literacy</td>
<td></td>
</tr>
<tr>
<td>Quantitative Literacy</td>
<td></td>
</tr>
</tbody>
</table>

Updated: 2/15/2017
L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Assessments – How it is met &amp; When it is met</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Analyze and explain the behavior of simple PHP programs involving decision and loop structures.</td>
<td>Items on the midterm exam weeks 7-8.</td>
</tr>
<tr>
<td>2. Design, implement, test, and debug a PHP program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, functions, and exception handling.</td>
<td>Items on the midterm exam weeks 7-8; final project weeks 14-15</td>
</tr>
<tr>
<td>3. Demonstrate the use of regular expressions in PHP code.</td>
<td>Items on the midterm exam weeks 7-8.</td>
</tr>
<tr>
<td>4. Describe how the PHP class mechanism supports encapsulation and information hiding.</td>
<td>Items on the midterm exam weeks 7-8.</td>
</tr>
<tr>
<td>5. Design, implement, and test the implementation of objects using a class hierarchy and inheritance.</td>
<td>Items on the final exam weeks 15-16</td>
</tr>
<tr>
<td>6. Create a relational database schema in SQL that incorporates key, entity integrity, and referential integrity constraints.</td>
<td>Final project weeks 14-15</td>
</tr>
<tr>
<td>7. Demonstrate data definition in SQL and retrieving information from a database using the SQL SELECT statement.</td>
<td>Final project weeks 14-15</td>
</tr>
<tr>
<td>8. Create a transaction by embedding SQL into an application program.</td>
<td>Final project weeks 14-15</td>
</tr>
<tr>
<td>10. Design and implement a small to medium size web-enabled information storage and retrieval system using appropriate authoring tools.</td>
<td>Final project weeks 14-15</td>
</tr>
<tr>
<td>11. Demonstrate understanding of critical e-commerce security issues.</td>
<td>Items on the midterm exam weeks 7-8; Final project weeks 14-15</td>
</tr>
</tbody>
</table>

M. Topical Timeline (Subject to Change):

1. Basic syntax and semantics of PHP
2. Variables, types, expressions, and assignment
3. Representation of numeric data
4. Range, precision, and rounding errors
5. Representation of character data
6. Strings and string processing
7. Runtime storage management
8. Conditional and iterative control structures
9. Functions and parameter passing
10. Arrays
11. Input to PHP via name=value data
12. Using PHP to author SQL queries
13. Converting SQL query results tables into variable values
14. Using PHP to author HTML
15. Debugging strategies
16. Object-oriented design
17. Encapsulation and information-hiding
18. Separation of behavior and implementation
19. Classes and subclasses
20. Inheritance (overriding, dynamic dispatch)
21. Polymorphism (subtype polymorphism vs. inheritance)
22. Managing the Date and Time with PHP
23. Using Session Control in PHP
24. SQL data definition, query formulation, update sublanguage, constraints, and integrity
25. Database design using MySQL
26. Candidate keys, superkeys, and closure of a set of attributes
27. Normal forms (1NF, 2NF, 3NF)
28. Embedded SQL transactions
29. Documents, electronic publishing, markup, and markup languages
30. Browsing, navigation, views, zooming
31. Protocols and systems (including web, HTTP)
32. E-Commerce Security Issues
33. Implementing Authentication with PHP and MySQL
34. Implementing Secure Transactions with PHP and MySQL
35. Building a Shopping Cart with PHP and MySQL

N. Course Assignments:

1. Quizzes
2. Chapter Exercises
3. Midterm Exam
4. Final Exam
5. Programming Project

O. Recommended Grading Scale:

<table>
<thead>
<tr>
<th>NUMERIC</th>
<th>GRADE</th>
<th>POINTS</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>93–100</td>
<td>A</td>
<td>4.00</td>
<td>Superior</td>
</tr>
<tr>
<td>90–92</td>
<td>A-</td>
<td>3.67</td>
<td>Superior</td>
</tr>
<tr>
<td>87–89</td>
<td>B+</td>
<td>3.33</td>
<td>Above Average</td>
</tr>
<tr>
<td>83–86</td>
<td>B</td>
<td>3.00</td>
<td>Above Average</td>
</tr>
<tr>
<td>80–82</td>
<td>B-</td>
<td>2.67</td>
<td>Above Average</td>
</tr>
<tr>
<td>77–79</td>
<td>C+</td>
<td>2.33</td>
<td>Average</td>
</tr>
<tr>
<td>73–76</td>
<td>C</td>
<td>2.00</td>
<td>Average</td>
</tr>
<tr>
<td>70–72</td>
<td>C-</td>
<td>1.67</td>
<td>Below Average</td>
</tr>
<tr>
<td>67–69</td>
<td>D+</td>
<td>1.33</td>
<td>Below Average</td>
</tr>
<tr>
<td>63–66</td>
<td>D</td>
<td>1.00</td>
<td>Below Average</td>
</tr>
<tr>
<td>60–62</td>
<td>D-</td>
<td>0.67</td>
<td>Poor</td>
</tr>
<tr>
<td>00–59</td>
<td>F</td>
<td>0.00</td>
<td>Failure</td>
</tr>
</tbody>
</table>

P. Grading and Testing Guidelines:

Click here to enter text.

Q. Examination Policy:

Click here to enter text.

R. Class Attendance and Homework Make-Up Policy:
S. **Classroom Expectations:**

Click here to enter text.

T. **College Procedures/Policies:**

**Attendance Requirements:** All students are required to attend all scheduled classes and examinations. Each faculty member has the right to establish regulations regarding attendance that he/she considers necessary for successful study.

Students who do not attend classes may be administratively withdrawn from those classes. However, failure to attend classes does not constitute withdrawal, and students are expected to process a formal withdrawal though the Student Records Office in Kee Hall.

**Student engagement requirements:**
Student engagement is based on the “active pursuit” of learning which can be measured by class attendance, class participation (in class or online), taking required quizzes/examinations, and submission of work assignments or papers. Student engagement consists of a student attending at least 60% of the class sessions (there should be attendance throughout the term) and/or completing 75% of the assignments listed on the syllabus at the midpoint in the term. Exceptions can be made when there is on-going communication between the student and faculty member. The communication must be documented and the faculty member and student must be in agreement regarding the exception. Students not meeting the expectation will be administratively withdrawn from class. If a student believes he/she was administratively withdrawn in error, he/she may file an appeal. Being administratively withdrawn may have program and financial aid implications.

**Academic Misconduct** is any activity that tends to compromise the academic integrity of the college, or subvert the educational process. Examples of academic misconduct include, but are not limited to:

1. **Violation of course or program rules** as contained in the course syllabus or other information provided to the student; violation of program requirements as established by departments and made available to students.

2. **Plagiarism** including, but not limited to, submitting, without appropriate acknowledgment, any written, visual or oral material that has been copied in whole or in part from the work of others (whether such source is published or not) even if the material is completely paraphrased in one’s own words. This includes another individual’s academic composition, compilation, or other product, or a commercially prepared paper. Plagiarism also includes submitting work in which portions were substantially produced by someone acting as a tutor or editor.

   Such practices constitute plagiarism regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain that what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed.

3. **Cheating** and dishonest practices in connection with examinations, papers and projects, including but not limited to using unauthorized notes, study aids or information on an examination; taking an exam or doing work for another student; providing one’s own work for another student to copy and submit as his/her own; or allowing another student to do one’s work and then submitting the work as one’s own. Also included would be altering a graded work after it has been returned, then submitting the work for re-grading; or submitting identical or similar papers for credit in more than one course without prior permission from the course instructors.
4. **Fabrication** including but not limited to falsifying or inventing any information, data or citation; presenting data that were not gathered in accordance with defined appropriate guidelines, and failing to include an accurate account of the method by which data were collected.

5. **Obtaining an Unfair Advantage** including, but not limited to stealing, reproducing, circulating, or otherwise gaining access to examination materials prior to the time authorized by the instructor; unauthorized collaborating on an academic assignment; taking, hiding or altering resource material; or undertaking any activity with the purpose of creating or obtaining an unfair advantage over another student’s academic work.

6. **Aiding and Abetting Academic Dishonesty** including, but not limited to providing material, information or other assistance to another person with the knowledge that such aid could be used in any of the violations stated above, or providing false information in connection with any inquiry regarding academic integrity.

7. **Alteration of Grades or Marks** including but not limited to, action by the student in an effort to change the earned credit or grade.

In addition, cases of academic dishonesty may involve photocopied materials. Materials used may fall under the Copyright Act. Violations of said Act may subject the user and/or the College to sanctions.

**Statement on Disabilities**: Any student who requires reasonable accommodations related to a disability should inform the course instructor and the Coordinator of Specialized Services (Room 138 in Kee Hall; phone 419-755-4727).

Students who encounter difficulty in any of their courses are encouraged to visit the Tutoring Resource Center (Room 119 in Fallerius Technical Education Center) for tutoring assistance, and the Student Success Center (Room 136 in Kee Hall) for academic assistance, advising services, referrals for personal counseling and Learning Disability (LD) Testing.

**Statement on Withdrawals**: As a student, you are expected to attend class. If you are unable or choose not to attend class, or if for whatever reason you are unable to keep up with the requirements of a course, you need to officially drop the class at the Student Records Office. Refund dates and withdrawal dates will vary slightly from term to term. Contact the Student Records Office for applicable dates. Additionally these dates are posted on the academic calendar available on the college’s website, [www.ncstatecollege.edu](http://www.ncstatecollege.edu), under the Academics heading on the home page and are available at the Student Records Office in Kee Hall. Students should go to the Student Records Office (Room 142 in Kee Hall) to process their withdrawal from any class.

If you choose to walk away from your class without officially withdrawing from it, the faculty member teaching the class must grade your classroom performance on the material available to him or her. This normally results in an "F" grade. An "F" grade can lower your grade point average considerably depending on the total credits accumulated.