

# Course Material Submission Form

## OAN Match Definition Form

**Today's Date:** 7/13/2007

<b>Use this table to specify institutional data</b>	
<b>College/University:</b>	Cleveland State University
Name and title of individual submitting on behalf of the college/university	
<b>Name:</b>	Ed Mills
<b>Title:</b>	Chief Enrollment Services Officer
<b>Address:</b>	2121 Euclid Ave
<b>Email:</b>	e.e.mills@csuohio.edu
<b>Phone:</b>	216-687-2119
<b>Fax:</b>	216-687-9247

**Indicate the reason for this submission:**

New Course Match  
 Course Renumbering Only (do not use for calendar changes)  
 Revised Materials - Faculty review panel requested clarification  
 Revised Materials - Institution submitting additional information  
 Revised Materials - Course content revised by institution, including situations of both content and credit hour change  
 Revised Materials - Other

**Describe specific revisions being made for "Revised Materials" submissions:**  
 Submitted additional information regarding weekly description of the lecture and lab topics as requested by TAG panel.

**Institutional Notes to Faculty Panel (the institution is encouraged to add any additional clarifications for this submission):**

**Table 1 – Use this table to describe the course match for which materials are being submitted for the first time or revised.**

Proposed effective year and term of match (Final effective date will depend on actual approval of match by faculty panel. Effective Year and Term is the first term in which students taking the course will receive matching credit.)

Semester institutions complete this row:  
 2007 Academic Year       Summer    Autumn    Spring

Quarter institutions complete this row:  
 20      Academic Year    Summer    Autumn    Winter    Spring

<b>Ohio Articulation</b>	
--------------------------	--

<b>Number (OAN)</b> (Use a separate form for each OAN.): <b>016</b>	
<b>Number of courses in the match:</b>	<b>1</b>
<b>Current status of match:</b>	<input type="checkbox"/> First time submission <input type="checkbox"/> Approved <input type="checkbox"/> Submitted <input type="checkbox"/> Disapproved <input type="checkbox"/> Error <input checked="" type="checkbox"/> Resubmitted <input type="checkbox"/> Pending <input type="checkbox"/> Error with enrollment <input type="checkbox"/> Not submitted
<b>Course or Courses being matched to or currently matched to the OAN listed above.</b> (Course Numbers must be exactly what will appear on a student's transcript.):	<b>Course Number</b>
	1. <a href="#">PHY 241 (OAN 016)</a>
	2.
	3.
	4.
	5.
	6.
	7.
	8.
	9.
10.	

**Table 2 - Use this table to submit course materials for the first time or to revise previously submitted course materials. You must submit each course in a separate form, repeating the match definition information in Table 1 above for each form submitted.**

<b>Course Number.</b> (Course Numbers must be exactly what will appear on a student's transcript.):	<a href="#">241</a>	<b>Course Title:</b> University Physics I	
<b>Hours (be sure that the hours for this course matches the hours in the OAN.)</b>			
<input checked="" type="checkbox"/> <b>Semester Hours</b>		<input type="checkbox"/> <b>Quarter Hours</b>	
<b>Total Credit Hours</b>	<a href="#">5</a>	<b>Lecture Hours</b>	<a href="#">4</a>
		<b>Laboratory Hours (if applicable)</b>	<a href="#">1</a>
<b>Course Placement in Major:</b>		<input checked="" type="checkbox"/> Major Requirement <input checked="" type="checkbox"/> Major Elective <input type="checkbox"/> Major Not Offered <input checked="" type="checkbox"/> Other	
<b>Pre-Requisite Course work (if applicable)</b> (Be sure this is consistent with the OAN definition): <a href="#">OMT 005 and OMT 006</a>			
<b>Catalog/Course Description:</b> <a href="#">Math 181 and Math 182</a>			
<b>Texts/Outside Readings/Ancillary Materials</b> (Be sure that the text meets performance expectations):			
<b>Course Objectives and/or Plan of Work:</b> (Provide a clear indication of how the course objectives align with the matched OAN's learning outcomes. This will			

facilitate the faculty panel course review process.) PHY 241 Textbook: *Fundamentals of Physics* by Halliday, Resnick, and Walker

Week	Chap	Subject
1	1,2	Measurement Motion along a Straight Line
2	3	Vectors
3	4	Motion in Two and Three Dimensions
4	5	Force and Motion (Newton's laws)
5	6	Force and Motion (Friction, centripetal force, uniform circular motion)
6	7	Kinetic Energy and Work
7	8	Potential Energy and Conservation of Energy
8	9	Center of Mass and Linear Momentum
9	10	Rotation (equations of motion, torque, Newton's laws)
10	11	Rotation (rolling, angular momentum)
11	13 15	Gravitation (Newton) Oscillations (SHM)
12	16	Waves (string waves, interference)
13	17	Waves (sound waves, interference, Doppler effect)
14	18	Temperature, Heat, First Law of Thermo

15	18 20	Kinetic Theory of Gases Entropy and Second Law of Thermo
	<b>FINAL</b>	

**Description of Assessment and/or Evaluation of Student Learning** (The assessment plan needs to be appropriate for the expected rigor of the course) :

**Master Syllabi and Working Syllabi (if both are used):  
UNIVERSITY PHYSICS I (PHY 241 & 243) EXPERIMENT LIST**

Labs meet for 3 hours per week, every week for the semester. One experiment is done per week. Each student is required to submit an individual lab report, which is graded by a teaching assistant on a 100 point scale. The graded report and TA comments are given back to the student within 1 week. The TAs are supervised by the Lab Manager (staff) and a professor. The average lab grade counts for 20% of the course grade. Completion of the labs is required to pass the course.

#	Title and Objectives
Orientation	<b>ORIENTATION LAB</b>  1. The objective of this experiment is to familiarize students with MathCad, the computer program which they will use to analyze their data.
1	<b>MEASUREMENT AND ERROR</b>  1. To measure the dimensions and mass of a block, avoiding obvious systematic error.  2. To obtain an estimate of the precision of your measurements.  3. To calculate the density of the aluminum block and, by comparing your result with a standard/reference value, calculate the precision of your measurement (% Error).  4. To determine the probability that any difference is random or statistical in nature rather than systematic (referring to the Table of Probability of Occurrence of Deviations).
2	<b>MEASUREMENT OF TIME AND ACCELERATION</b>  1. To measure the time interval between two events using a high speed clock.  2. To apply linear regression in the analysis of data.

	<p>3. To measure the acceleration due to gravity of a glider on a tilted air track.</p>
3	<p><b>TWO-DIMENSIONAL MOTION</b></p> <p>1. Measure the distance a particle travels from a given height as a function of horizontal velocity.</p>
4	<p><b>NEWTON'S SECOND LAW</b></p> <p>1. Measure the acceleration of a block on a horizontal plane as a function of the force applied to it.</p>
5	<p><b>AN OPERATIONAL DEFINITION OF MASS</b></p> <p>1. To obtain an operational definition of mass in the laboratory.</p>
6	<p><b>THE WORK-KINETIC ENERGY THEOREM</b></p> <p>1. To apply the work-energy theorem to a real physical system.</p>
7	<p><b>CONSERVATION OF MOMENTUM</b></p> <p>1. To study the conservation of momentum in inelastic collisions.</p>
8	<p><b>ROTATIONAL INERTIA AND TORQUE</b></p> <p>1. To measure rotational inertia of a rigid body using the rotational equivalent of Newton's Second Law.</p> <p>2. To vary the rotational inertia of a rotating system in a predictable way by positioning attached masses.</p> <p>3. To test whether the rotational inertia, as measured in objective (1), varies as expected when the position of attached masses is varied.</p>
9	<p><b>SIMPLE HARMONIC MOTION</b></p> <p>1. To determine the spring constant and effective mass of a spring and the moment of inertia of a physical pendulum.</p>
9A	<p><b>AIR TABLE SIMPLE PENDULUM</b></p> <p>1. To make a movie clip of the oscillatory motion of a puck on an inclined air table when constrained to a circular path.</p> <p>2. To find the position coordinates of the puck in each movie frame.</p> <p>3. To calculate the angular velocity of the puck in each frame.</p> <p>4. To calculate the mechanical energy of the puck in each frame.</p> <p>5. To determine the work of friction and the frictional torque acting on the puck.</p>

	6. To measure and predict the pendulum period versus the amplitude of the angular displacement.
10	<b>STANDING WAVES</b> 1. To determine the condition needed to produce resonance in a string.
11	<b>RESONANCE IN OPEN AND CLOSED AIR COLUMNS</b> 2. Investigate the phenomena of resonance in air columns and determine the velocity of sound in air.
12	<b>CONSTANT VOLUME GAS THERMOMETER</b> 1. To obtain an experimental graph of the pressure-temperature relationship for a real gas. 2. To use an extrapolation method to estimate "absolute zero."

**Additional Documentation:**

Physics 241-243 at Cleveland State University

This is the first semester of "University Physics" --- calculus-based physics *with* lab

Book: *Fundamentals of Physics* 8<sup>th</sup> edition by Halliday, Resnick, and Walker

Chapters	Topics
1	Measurement and units in physics
2	Motion along a straight line
3	Vectors
4	Motion in two and three dimensions
5	Forces and motion (Newton's laws of motion)
6	Forces and motion (friction, drag, centripetal force)
7	Kinetic energy and work
8	Potential energy and conservation of energy
9	Center of mass, Newton's law in terms of momentum, conservation of momentum in explosions, impulse, conservation of momentum in collisions
10	Angular motion, torque, rotational kinetic energy
11	Rolling motion and angular momentum
13	Gravitational force and potential energy
15	Simple harmonic motion
16	Transverse waves, interference, standing waves, resonance
17	Longitudinal waves, interference, resonance

18	Introduction to thermal physics
19	Kinetic theory of gases
20	Entropy and the Second Law of Thermo

Grading in Physics 241/243 and 242/244

Each course is one semester long

The course is derived from

- (1) the three hour-long exams (each covering 1/3 of the course),
- (2) the weekly quizzes,
- (3) the comprehensive final (2 hours),
- (4) the weekly graded homework problems,
- (5) the labs (20% of the course grade)

The letter-grade distribution is normally the following:

- A the top 15%
- B the next 35%
- C the next 35%
- D the next 10%
- F the lowest 5%

The exams and quizzes are all graded by the professor teaching the course (and not by TAs).

**OBR Use**

<b>Approved-Effective Date</b>	
<b>Pending (i.e. Additional Information Requested)</b>	
<b>Disapproved</b>	
<b>Today's Date</b>	

# Course Material Submission Form

## Instructions and notes

1. Submit completed forms to [atpanels@regents.state.oh.us](mailto:atpanels@regents.state.oh.us).
2. Use this form to define course matches and to submit new or revised course materials for faculty panel review. Please do not submit a form for multiple OANs or Courses.
3. For course renumbering and credit hour revision, remember to withdraw the old match.
4. For course renumbering and credit hour revision, you may want to include information about how the new numbers relate to the old in the Institutional Notes to the Faculty Panel.
5. Click check boxes to check the item. Text fields will expand as you enter information. Press tab to move forward through form. Press Shift-tab to move backward. Note that these tables are implemented as MS Word tables. Keep that in mind as you are copying and pasting between your syllabi and this form. It is possible to paste tables as nested tables. Use the Edit Menu "Paste as Nested Tables" selection.
6. Once you are done entering your information, save the data file. Under the File menu, choose "Save as" and then enter the name (no spaces!) of the file using the following naming conventions:
  - a. For course material submissions: **Institution-OAN-Course Number-Sequence-Version. Institution** is the 4 character HEI institution designation. **OAN** is the Ohio Articulation Number whose match is being defined or revised. **Course Number** is the **transcript** course number. **Sequence** is an indication of which course of a multi-course match is addressed in this form. The sequence is of the form (n of m) for an m-course match. For example, 1 of 1 for a single course match or 1 of 2 and 2 of 2 for a 2 course match. **Version** is a number indicating the revision number of this submission. Start with "Ver1" for the first time submission and include the "Ver".

### Example:

If you are submitting course materials for Rhodes Community College MATH110 for OMT005 the name of the file would be LMTC-OMT005-MATH110-(1 of 1)-Ver1.

If you are submitting course materials for Rhodes Community College MATH111 and MATH112 for OMT006 the name of the files would be LMTC-OMT006-MATH111-(1 of 2)-Ver1 and LMTC-OMT006-MATH112-(2 of 2)-Ver1.

7. Course materials must be submitted according to timelines below:

Considering the submissions of **new** courses for TAG matches, our goal is to work toward a timeline as follows:

Submit Course Material:	Start of Term 1
Faculty Panels Review Submitted Courses:	During Term 1
Approved course is effective:	Start of Term 2
Approved course is matched for transcript processing:	Term 3

A new match will have to be approved according to the timeframes below:

Course Approval Sample Timelines

#### Quarter Institutions

	Summer	Autumn	Winter	Spring
Course Material Submitted for Review	By 6/1	By 8/15	By 1/1	By 3/1
Faculty Panel Reviews Completed	By 8/1	By 12/31	By 2/28	By 5/31

#### Semester Institutions

	Summer	Autumn	Spring
Course Material Submitted for Review	By 6/1	By 8/15	By 1/1
Faculty Panel Reviews Completed	By 8/1	By 12/31	By 5/31

- If you want to submit supplementary supporting documentation, you may do that. Simply send the file along with this form and name the supplementary file **Institution-OAN-Course Number-Supplement. Institution, OAN, and Course Number** are as described in Number 6 above. Include the word **"Supplement"**. Just be sure to reference the supplement from the appropriate spot in this document.
- Remember that all institutions are required to have at least one course match for each OAN in all TAGs for which they have corresponding programs.
- This form should be used for all submissions or resubmissions starting immediately.
- If you encounter problems or have questions, please contact any of the individuals listed below:

Jim Ginzer (614) 752-9486 [jginzer@regents.state.oh.us](mailto:jginzer@regents.state.oh.us)  
 Sam Stoddard (614) 752-9532 [sstoddard@regents.state.oh.us](mailto:sstoddard@regents.state.oh.us)  
 Brett Berliner (614) 466-6004 [bberliner@regents.state.oh.us](mailto:bberliner@regents.state.oh.us)