

HESF 109-003 Step Aerobics
Health and Exercise Studies
Fall 2014

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Office: 2024 Carmichael Gym
Office Hours: M/W 11:15am-12:15pm and T/TH 12:15-1:15pm
Credit Hours: One
Prerequisites: None
Course meeting: M/W 10:15-11:05

Required Texts North Carolina State University Department of Health and Exercise Studies (2010). *Focus On Fitness and Wellness* (3rd.ed.). Plymouth, MI: Hayden McNeil.

Course Description:

This course is designed to teach and apply the principles of lifetime physical fitness, utilizing the five major components of cardio-respiratory endurance, muscular strength, muscular endurance, flexibility and body composition. A variety of health and wellness issues will be addressed. The components of fitness will be met through structured individually paced step aerobics classes. Muscular strength activities could take place in or out of the aerobics room.

Health Information Statement:

Physical activities in this class are considered moderate to vigorous and are considered limited contact. The NC State Department of Physical Education supports the development and improvement of physical health, while doing so safely. If you have a known medical condition that could be adversely affected by participating in the typical activities of this class, please contact your usual physician for recommendations about how to participate safely or whether it is more appropriate to choose a different Physical Education course. If your physician has provided you with recommendations to modify participation in this class, please share those recommendations with the instructor within the first week of class, if possible. If you are not certain whether you have a medical condition that puts you at risk for participation in this class or have a medical condition and cannot access your usual physician in a timely manner for recommendations for safe participation, consider making an appointment at Student Health to discuss your concerns (appointment number is 919.515.7107 or book on-line at healthweb.ncsu.edu).

GEP Objectives for Courses in the Category of Physical Education:

Each course in the Physical Education category of the General Education Program will provide instruction and guidance that help students to:

1. acquire the fundamentals of health-related fitness, encompassing cardio-respiratory and cardiovascular endurance, muscular strength and endurance, muscular flexibility and body composition;
2. apply knowledge of the fundamentals of health-related fitness toward developing, maintaining, and sustaining an active and healthy lifestyle;
3. acquire or enhance the basic motor skills and skill-related competencies, concepts, and strategies used in physical activities and sport; and
4. gain a thorough working knowledge, appreciation, and understanding of the spirit and rules, history, safety, and etiquette of physical activities and sport.

GEP/Course and Student Learning Outcomes:

By the end of this course, students will be able to:

1. Explain and perform the fitness requirements associated with step aerobics including cardio-respiratory and cardiovascular endurance, muscular strength and endurance, muscular flexibility and body composition.
2. Perform fitness activities through in-class and out-of-class activities.
3. Discuss and explain how adopting healthy lifestyle practices will lead to lifelong wellness.
4. Identify and explain how the body responds during physical activity through step aerobics.

5. Explain how utilizing different types of equipment and fitness principles affect the intensity of an individual's workout.
6. Identify the risks associated with step aerobics.
7. Demonstrate ability and knowledge of step aerobics movements.
8. Demonstrate and safely perform activities both in and out of the aerobics room.

Grading and Grading Scale:

Written Exams 40%

Students will be expected to demonstrate their knowledge of the material covered in class by completing two written exams at 20% each.

Physical Fitness Testing 60%

Students will perform four physical fitness tests for measuring cardio-respiratory endurance, muscular strength, muscular endurance and muscular flexibility at 15% each.

Each student has the option of taking the class for a letter grade (+/-), credit only, or audit.

97 - 100 = A+	93 - 96.99 = A	90 - 92.99 = A-
87 - 89.99 = B+	83 - 86.99 = B	80 - 82.99 = B-
77 - 79.99 = C+	73 - 76.99 = C	70 - 72.99 = C-
67 - 69.99 = D+	63 - 66.99 = D	60 - 62.99 = D-
0 - 59.99 = F		

Attendance:

Students are expected to attend all classes and to arrive and leave at the scheduled times. The instructor will adhere to the university attendance policy. In the case of an excused absence, the student will provide official documentation and then be allowed to make up any *written work* missed within one week of returning to class. Students are responsible for submitting such work and for scheduling make-up exams with the instructor.

See http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php.

1. Students are expected to be in class, participating in activity, each class day.
2. Attendance recording begins the first day of the semester.
3. Tardy two times: minus one (1) point

Note: The positive points are optional by the instructor.

Absences	Points
0	+3
1	+1
2-5	0
6	Failure

Participation: This is a participation-based class. If you cannot participate in class for any reason, you will be considered absent. **Tardy:** Please be on time. *Two tardies = one absence.*

Requirements for Credit Only:

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- (70%) or better. A grade of U will be reported if the student exceeds 6 absences (excused or unexcused). Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to:

http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.15.php **Note: The student is responsible for requesting credit only grading on MyPack Portal by the University deadline.**

Requirements for Audit:

Students must attend all classes except written exams and will be allowed four absences before NR will be recorded as a final grade. Refer to: http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.5.php

Incomplete Grades:

Incomplete grades will be assigned only if unavoidable and unforeseen events occur, such as a medical

emergency, preventing the student from completing a course requirement before the final grades are submitted. Incompletes must be made up before the end of the next regular semester in which the student is enrolled and in no case may be made up more than 12 months after the end of the semester in which the IN is awarded, unless the teacher or department offering the course is not able to provide the student with an opportunity to make up incomplete work, in which case the period can be extended. Make-up work is to be limited to accomplishing the work not completed. Refer to:

http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php

Late Assignments: Five points will be deducted from the assignment's final grade for first day the assignment is late. An additional two points per day will be deducted off the assignment's final grade for every day thereafter.

Electronic Hosted Course Components: Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Clothing and Equipment:

1. Department policy requires students to wear **gray departmental shirt** for all activity classes. Students may obtain shirt via Carmichael Gym checkout for no charge (laundry included), OR students may purchase a departmental shirt from the NC State Bookstore. Purchase choices include men's/women's fittings in two different materials, including dri-fit.
2. Students will wear **shorts/pants** appropriate for the activity. Fabric will be option of student; color must be primarily red, black, or gray.
3. Athletic **shoes** appropriate for the activity are required.
4. **Sweats** are students' choice; no fabric restrictions. Color must be predominantly red, black, or gray. Students must have appropriate departmental shirt underneath sweats when/if sweats are removed.

Online Class Evaluations will be available for students to complete during the last 2 weeks of semester. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will not know how any one student responded to any question, and students will not know the ratings for any instructors.

Evaluation website: <https://classeval.ncsu.edu/>

Student help desk: classeval@ncsu.edu

More information about ClassEval: <http://www.ncsu.edu/UPA/classeval/>

General Information:

1. **Academic Integrity:** For all written assignments, students will be expected to adhere to the **University Honor Code:** "I have neither given nor received unauthorized aid on this test or assignment." It is the understanding and expectation of the instructor that the student's signature on any test or assignment means that the student neither gave nor received unauthorized aid. Consult the university website:
http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php
2. **Students with Disabilities:** Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services Office at 1900 Student Health Campus Box 7509, 515-7653.
<http://www.ncsu.edu/dso/>

For more information on NC State's policy on working with students with disabilities, please see the **Academic Accommodations for Students with Disabilities Regulation**

(http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.1.php).

3. **Anti-Discrimination Statement:** NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, sex, creed, national origin, age, disability, veteran status or sexual orientation is a violation of state and federal law and/or

NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on color, religion, sex, creed, national origin, age, disability, veteran status or sexual orientation is also a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://www.ncsu.edu/policies/campus_environ or http://www.ncsu.edu/equal_op. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 515-3148.

4. Due to the nature of the activities in this class, it may be necessary for the instructor and students to have some amount of physical contact to assist in acquiring the proper form/technique. The student should inform the instructor if they do not want any physical contact to assist in acquiring the proper form/technique.
5. Every fitness activity has certain inherent risks, and regardless of precautions taken it is impossible to ensure total safety. Adhere to all safety guidelines to reduce your risk of injury.
6. The use of illegal drugs, tobacco products, or alcoholic beverages is prohibited.
7. Pets and visitors are not allowed during class periods.
8. Please turn off cell phones during class time.
9. All musical devices, such as MP3 players must be turned off when you enter this class.

Tentative Class Syllabus (*Subject to Change)

Week	Dates	Topic	Readings
1	Weds 8/20	Orientation / Safety	Syllabus, Chapter 1
2	Mon 8/25	Pre-Test (Step Test, Push-up, Curl-up, Flexibility)	PE uniform , Chapter 3
	Weds 8/27	Intro to Step/Posture, Alignment and Technique	Bring Calculator, Chapter 6
3	Mon 9/1	No Class – Labor Day	
	Weds 9/3	Step Aerobics	
4	Mon 9/8	Lecture (RM 2015)	
	Weds 9/10	Step Aerobics	
5	Mon 9/15	Step Aerobics	
	Weds 9/17	Intro to Strength Training (Weight RM 1309)	
6	Mon 9/22	Step Aerobics	
	Weds 9/24	Step Aerobics	
7	Mon 9/29	Step Aerobics	
	Weds 10/1	Step Aerobics	
9	Mon 10/6	Step Aerobics	
	Weds 10/8	Step Aerobics	
10	Mon 10/13	Step Aerobics	
	Weds 10/15	Strength Training (Weight RM 1309)	
11	Mon 10/20	Step Aerobics	
	Weds 10/22	Step Aerobics	
12	Mon 10/27	Lecture (RM 2015)	
	Weds 10/29	Step Aerobics	
13	Mon 11/3	Step Aerobics	
	Weds 11/5	Step Aerobics	
14	Mon 11/10	Step Aerobics	
	Weds 11/12	Strength Training (Weight RM 1309)	
15	Mon 11/17	Step Aerobics	
	Weds 11/19	Step Aerobics	
16	Mon 11/24	Step Aerobics	
	Weds 11/26	Step Aerobics	
17	Mon 12/1	Step Aerobics	
	Weds 12/3	Step Aerobics	

Step Test

The step test is completed by stepping up and down on a 13-in step for females and an 17-inch step for males. You will maintain a constant cadence for 3 minutes. At the end of the test, you sit down on the step and find your pulse at the carotid artery. A partner will take your pulse at the radial artery. You will begin counting 5 seconds after you sit and will count the pulse for 15 seconds. You MUST remain seated to do a second pulse count 30 seconds later for another 15 seconds. You will record both pulse counts made by you and your partner.

Step Test Calculation Chart

$$\sqrt{(2x^2 - \Delta^3)}$$

Δ = Difference of +1 min recovery entrance and exit x = exit 1 min. recovery count If the student's +1 min recovery exit count is LOWER, subtract Δ^3 from $2x^2$, take the $\sqrt{\quad}$ If the student's +1 min recovery exit count is HIGHER, add Δ^3 to $2x^2$, then take the $\sqrt{\quad}$

Step Test Recovery Scale		x	$2x^2$	x	$2x^2$	$-\Delta$	Δ^3
20 points		10	200	27.5	1512.5	1.	.4 3
		10.5	220.5	28	1568	2	8
		11	242	28.5	1624.5	2.	15.6
23 & below	20	11.5	264.5	29	1682	3	27
24-24.9	19.8	12	288	29.5	1740.5	3.	42.9
25-25.9	19.6	12.5	312.5	30	1800	4	64
26-26.9	19.4	13	338	30.5	1860.5	4.	91.1
27-27.9	19.2	13.5	364.5	31	1922	5	125
28-28.9	19	14	392	31.5	1984.5	5.	166.4
29-29.9	18.8	14.5	422.5	32	2048	6	216
30-30.9	18.6	15	450	32.5	2112.5	6.	274.6
31-31.9	18.4	15.5	480.5	33	2178	7	343
32-32.9	18.2	16	512	33.5	2244.5	7.	421.9
33-33.9	18	16.5	544.5	34	2312	8	512
34-34.9	17.8	17	578	34.5	2380.5	8.	614.1
35-35.9	17.6	17.5	612.5	35	2450	9	729
36-36.9	17.4	18	648	35.5	2520.5	9.	857.4
37-37.9	17.2	18.5	684.5	36	2592	10	1000
38-38.9	17	19	722	36.5	2664.5		
39-39.9	16.8	19.5	760.5	37	2738		
40-40.9	16.6	20	800	37.5	2812.5		
41-41.9	16.4	20.5	840.5	38	2888		
42-42.9	16.2	21	882	38.5	2964.5		
43-43.9	16	21.5	924.5	39	3042		
44-44.9	15.8	22	968	39.5	3120.5		
45-45.9	15.6	22.5	1012.5	40	3200		
46-46.9	15.4	23	1058	40.5	3280.5		
47-47.9	15.2	23.5	1104.5	41	3362		
48-48.9	15	24	1152	41.5	3444.5		
49-49.9	14.8	24.5	1200.5	42	3528		
		25	1250	42.5	3612.5		
		25.5	1300.5	43	3698		
		26	1352	43.5	3784.5		
		26.5	1404.5	44	3872		
		27	1458	44.5	3960.5		
				45	4050		

Pushup Grading Scale
(Based on Ages 17 – 24 years)

Females		Males		Grade
Modified (Reps)	Standard (Reps)	Standard (Reps)	Percentage (%)	
> 53	> 43	> 66	100	
51 – 53	41 – 43	64 – 66	97	
47 – 50	38 – 40	59 – 63	93	
44 – 46	35 – 37	56 – 58	90	
41 – 43	32 – 34	53 – 55	87	
37 – 40	29 – 31	48 – 52	83	
34 – 36	26 – 28	45 – 47	80	
31 – 33	23 – 25	42 – 44	77	
27 – 30	20 – 22	37 – 41	73	
24 – 26	17 – 19	34 – 36	70	
21 – 23	14 – 16	31 – 33	67	
17 – 20	11 – 13	26 – 30	63	
14 – 16	8 – 10	23 – 25	60	
< 14	< 8	< 23	57	

**Source: 2010 North Carolina State University Health and Exercise Studies Department*

Objective: Pushups measure muscular endurance of the upper body muscles to include shoulders, chest, and back of the upper arms. The student will perform as many repetitions as possible for duration of two minutes, resting only in the plank position.

Standard Position: The student will start in a plank position with back straight, head up, elbows fully extended, and hands placed on the floor just wider than the width of shoulders. The student will then lower himself/herself until the elbows are at a 90 degree angle and then push himself/herself back up until the elbows are fully extended, ensuring that the straight body position is maintained throughout the movement. This will be considered a repetition.

Modified Position: Students assume a push-up position with the lower legs together and the knees in contact with the floor. Hands are placed approximately shoulder-width apart with fingers facing forward. Head, neck and back should remain in a straight line throughout the motion. The student will then lower himself/herself until the elbows are at a 90 degree angle and then push himself/herself back up until the elbows are fully extended, ensuring that the straight body position is maintained throughout the movement.

Curl-up Test

This test is conducted lying on your back, knees bent ~90 degrees, with feet flat on the floor. Arms should be extended down each side with fingertips touching the 3-inch mark from the end of the mat. You must maintain proper form, touch the end of the mat with each repetition and maintain the cadence in order to continue in the test (a partner should be watching these things and counting). If there is a mistake in any of these areas, the test is ended. This is not a timed test.

Things to watch for:

- Both arms must be fully extended (reaching) to starting point – shoulder blades down.
- There are no breaks allowed – if you stop, you are done.
- 32 curls are completed in one minute if the proper cadence is maintained.

Test is ended if the student does not touch the end of the mat with both fingers, cannot maintain cadence, or breaks form.

Curl-up Test 15 points		
Males		Females
Raw Score	Scale Score	Raw Score
94+	15	85+
88-93	14.5	79-84
82-87	14	74-78
77-81	13.5	70-73
75-76	13	68-69
72-74	12.5	66-67
70-71	12	64-65
68-69	11.5	62-63
66-67	11	60-61
65	10.5	59
63-64	10	57-58
61-62	9.5	55-56
59-60	9	53-54
57-59	8.5	51-52
55-56	8	49-50
53-54	7.5	47-48
51-52	7	45-46
48-50	6.5	42-44
47	6	41

Source: Based on norms calculated from Robert Lualhati on 4545 college students, age 16-80 yrs.

http://courses.ncsu.edu/hes105/common/media/pe105&hes109/curl_up_test/curl_up.html

Crunch Test

The student will lay on his/her back, knees bent, feet flat on the floor with the arms crossed on the chest in front of the body. Each time the student raises his/her shoulder blades off of the floor and returns to the starting position it counts as one repetition. The person counting the repetitions should place a hand on the floor under the shoulder blades of the student being tested. The testing students' shoulder blades must touch the hand between each repetition. The student will be timed for 2 minutes.

Women		Men
2 min.	<i>Percentage</i>	2 min.
140>	100	150>
134-139	97	144-149
127-133	95	137-143
120-126	93	130-136
114-118	90	124-139
107-117	87	117-123
100-106	85	110-116
94-99	83	104-109
90-93	80	100-103
84-89	77	94-99
77-83	75	87-93
74-76	73	84-86
67-73	70	77-83
60-66	67	70-76
54-59	65	64-69
47-53	63	57-69
40-46	60	50-56
<39	50	<49

**Source: Health and Exercise Studies Department; North Carolina State University 2007*

Video demonstration: <http://courses.ncsu.edu/hes101/common/media/crunch/crunch.html>

Sit-Up Test

The student will begin with knees bent at 90 degrees, feet flat, back flat, and hands interlocked behind the head. The feet are held by a partner. When command to "begin" is given, the student will raise the upper body up until the shoulders are even with the hips, or the nose is even with the knees. Then they will lower themselves down until the shoulder blades touch the floor. The repetition is counted in the down position. The student will be timed for 2 minutes, resting only in the up position, shoulders NOT touching knees.

Fingers must remain interlocked or the repetition is not counted.

Males	Points	Female
70	10	60
69	9.9	59
68	9.8	58
67	9.7	57
66	9.6	56
65	9.5	55
64	9.4	54
63	9.3	53
62	9.2	52
61	9.1	51
60	9.0	50
59	8.9	49
58	8.8	48
57	8.7	47
56	8.6	46
55	8.5	45
54	8.4	44
53	8.3	43
52	8.2	42
51	8.1	41
50	8.0	40
49	7.9	39
48	7.8	38
47	7.77	37
46	7.6	36
45	7.5	35
44	7.4	34
43	7.3	33
42	7.2	32
41	7.1	31
40	7.0	30
39	6.9	29
38	6.8	28
37	6.7	27
36	6.6	26
35	6.5	25
34	6.4	24
33	6.3	23
32	6.2	22
31	6.1	21
30	6.0	20
29	5.9	19
28	5.8	18
27	5.7	17

26	5.6	16
25	5.5	15
24	5.4	14
23	5.3	13
22	5.2	12
21	5.1	11
20	5.0	10

Source: Based on Army Physical Fitness Standards in accordance with the Army Field Manual 21-20, modified by the North Carolina State University; Department of Health and Exercise Studies (September 2007)

Video demonstration: <http://courses.ncsu.edu/hes107/common/media/pe107/situp/situp.html>

Flexibility

Flexibility will be tested by a modified sit and reach test. Shoes should be removed. You will sit on the floor with your back against the wall, legs extended in front of you with your feet flat against the measurement box. . A ruler is placed on top of the box so that it extends 15” over the end of the box, with the zero mark towards you. Make sure your hips are pulled back against the wall. With your shoulder blades against the wall, extend your arms out in front and slide your hands (hand over hand) along the ruler as far as you can without bending at the knees. This will be completed 3 times and the highest score will be recorded. The grading scale is below.

Flexibility 10 points

	Male		Female	
	Raw Score	Scale Score	Raw Score	Scale Score
23+		10	24+	
22.5		9.9	23.5	
22		9.8	23	
22.5	A	9.6	A	22.5
21		9.4	22	
20.5		9.2	21.5	
20		9	21	
19.5		8.9	20.5	
19		8.8	20	
18.5	18.5		8.6	19.5
18		8.4	B	19
17.5		8.2	18.5	
17		8	18	
16.5	16.5		7.9	17.5
16		7.8	17	
15.5	15.5		7.6	16.5
15		7.4	C	16
14.5		7.2	15.5	
14		7	15	
13.5	13.5		6.9	14.5
13		6.8	14	
12.5	12.5		6.6	13.5
12		6.4	D	13
11.5	11.5		6.2	12.5
11		6	12	
10.5	10.5		5.9	11.5
10		5.8	11	
9.5		5.6	10.5	
9		5.4	10	

Note. Values reported in inches.

Cooper Institute (2008). Physical Fitness Standards, pgs. 28-35.