



THE BASIC BIOLOGY OF MUSCULAR CONTRACTION # SCI.100.1.05

INSTRUCTOR: DAN CARTER, SUPER SLOW MASTER

Name of Course:	The Basic Biology of Muscular Contraction	
Course Number:	SCI.100.1.05	
Instructor(s):	Dan Carter, SuperSlow Master	
Hours/CEU Credit :	.5 CEU	
Course Start Date:	Wed, Jan. 31, 2007	
Course End Date:	Wed, Mar. 7, 2007	
Class Size:	Min: 8	Max: 15
Course Registration Cut Off Date: Fri., Oct. 20, 2006	Course Cancellation Date: January 19, 2007 (If a minimum of 8 students have not registered by 5:30 pm EDT, Fri., Jan. 19, 2007, the course will be canceled.)	
“Wow – I could not have done this well.” ... Doug McGuff, M.D.	Here’s what Dr. Doug McGuff had to say about Dan’s chapter contribution to the third edition of the SuperSlow Technical Manual, the basis for this course.	

A. Course Description	A SuperSlow Instructor’s Guide to the Mechanics of Muscular Contraction, Recovery and Optimal Results
------------------------------	---

B. Course Purpose:	Why can we say SuperSlow is more aerobic than activity commonly called aerobic? What exactly is muscular failure and the <i>stimulus</i> it produces? What occurs as a result of this stimulus, and why does it require increasingly more time? What specifically are the precious recovery resources we all talk about? Why are the results of proper strength training much longer lasting than those of other so called exercise protocols? And how to use the answers to these questions to tailor the SuperSlow session for optimal results.
---------------------------	---

C. Learning Objectives

1. Learn the biology of muscular contraction.
2. Learn how muscular contraction is fueled.
3. Learn about muscle micro trauma, as well as, where and when it occurs.
4. Learn the process of recovering from muscular micro trauma.
5. Learn how SuperSlow exercise protocol provides all the biological requirements for immediate, continuous, and worthwhile results.

D. Expected Outcomes

1. Learners should be able to Diagram the biology of muscular contraction.
2. Learners should be able to Describe how muscular contraction is fueled.
3. Learners should be able to Discuss muscle micro trauma, as well as, where and when it occurs.
4. Learners should be able to Integrate into their conversational knowledge, the process of recovering from muscular micro trauma.
5. Learners should be able to Identify key points of how SuperSlow exercise protocol provides all the biological requirements for immediate, continuous, and worthwhile results.



THE BASIC BIOLOGY OF MUSCULAR CONTRACTION # SCI.100.1.05

INSTRUCTOR: DAN CARTER, SUPERSLOW MASTER

E. Topics

1. Glucose, glycogen, carbohydrates, aerobic respiration, and ATP.
2. Fiber types, motor units, and muscular contraction.
3. Muscular micro trauma, the inflammatory response and indirect affect.
4. Why the SuperSlow exercise protocol produces results fast.
5. Why other protocols do not.

Class #1: Muscle Fibers: The biology of muscular contraction.

- Key Learning Points:**
1. Muscle Fibers
 2. Motor Units
 3. Neurological Efficiency

Class #2: Muscle Fiber Type Specifics

- Key Learning Points:**
1. Muscle Fiber Type: classification and characteristics
 2. Substances that fuel contraction
 3. Impact of fiber type on metabolic conditioning

Class #3: Aerobic Respiration

- Key Learning Points:**
1. Where production fuel for muscular contraction begins.
 2. Muscle fiber type and ATP production demand.
 3. Aerobic Respiration vs. ATP Production:
 - a. Greater production of ATP
 - b. Trainable

Class #4: Putting it all Together: How the systems responsible for muscular contraction work together.

- Key Learning Points:**
1. Muscle fiber recruitment.
 2. Exercise to failure.
 3. One cycle of aerobic respiration.
 4. Micro trauma discussion: from cause to effect.

Class #5: Recovery: Processes and Resources

- Key Learning Points:**
1. Biologic processes post exercise.
 2. Inflammatory response.
 3. Regulation of muscle stimulation and growth.
 4. Cycle of recovery.

F. Class Structure

- 4 one-hour Tele-classes: 50% of Class Leader Presentation - 50% of Student Participation
- 1 one-hour Tele-classes: 20% of Class Leader Presentation - 80% of Student Participation

Prior to attending class read and be familiar with:

1. SuperSlow The Ultimate Exercise Protocol, by Ken Hutchins
2. Ultimate Exercise Bulletin Number 1, M. Doug McGuff, MD
3. Article Compendium.



THE BASIC BIOLOGY OF MUSCULAR CONTRACTION # SCI.100.1.05
INSTRUCTOR: DAN CARTER, SUPER SLOW MASTER

Specific Course Dates – Please Mark Your Calendar				
All Students				
				Class Begin and End Times (Select Your Time Zone Below)
				12:00 pm to 1:00 pm Atlantic 11:00 am to 12:00 pm Eastern 10:00 am to 11:00 am Central 9:00 am to 10:00 am Mountain 8:00 am to 9:00 am Pacific
Who	Month	Day of The Week	Class Dates	
All Students	Jan.	Wed.	01-31-07	Class # 1
All Students	Feb.	Wed.	02-07-07	Class # 2
All Students	Feb.	Wed.	02-14-07	Class # 3
Class Break	Complete Assignment			02-21-07
All Students	Feb.	Wed.	02-28-07	Class # 4
All Students	Mar	Wed.	03-07-07	Class # 5

G. COURSE TELE-CLASS HOURS			
Total Hours <u>Tele-classes</u> (Distance Learning): .5 CEU	Approx. Reading/Preparation Hours: 3 hours	Total Class Hours: 5	Total Evaluation Time: 15 min.
Software Application Requirements: Everything Below Applies – You Must Have The Following			
<input type="checkbox"/> I HAVE Word For Windows <input type="checkbox"/> I HAVE Acrobat Reader for My PDF <input type="checkbox"/> I DO NOT have Acrobat Reader for My PDF so I will purchase a hard copy of the course material.			
Hardware Requirements: <input type="checkbox"/> Computer <input type="checkbox"/> High Speed Data (DSL, Broadband, Satellite, etc.) Telephone			
Tele-Course Conference Call Phone Number: Call: TBA		PIN #: TBA	
H. COURSE FEE AND MATERIALS			
COURSE FEE			
<input type="checkbox"/> Course Fee: \$85 per student (Does not include course materials) <input type="checkbox"/> *Repeat Course Fee: For Credit \$85 per student (Does not include course materials) *Repeat Course means that you did not previously pass/complete <input type="checkbox"/> **AUDIT Course: For NO Credit \$85 per student (Does not include course materials) ** By permission and when class size permits. Listening and not participating in the class.			
Cost for Audio CD Class Makeup: See Policies and Procedures			
<input type="checkbox"/> USA \$28 USD (includes shipping) <input type="checkbox"/> International \$33 USD (includes shipping)			
Audit Course Fee: No Credit (by permission) \$85			



THE BASIC BIOLOGY OF MUSCULAR CONTRACTION # SCI.100.1.05

INSTRUCTOR: DAN CARTER, SUPER SLOW MASTER

Required Course Materials:
Required Text for Class: Ultimate Exercise Bulletin Number 1, M. Doug McGuff, MD (If you have a copy you are not required to purchase)
Required Courseware Only:
<input type="checkbox"/> Courseware: \$10 per student (Includes US postage and handling)
<input type="checkbox"/> Courseware: \$17 per student (Includes International postage and handling)
If you need to purchase Ultimate Exercise Bulletin Number 1, M. Doug McGuff, MD, plus Required Courseware:
<input type="checkbox"/> Courseware + Text By US Mail \$32.00 USD (Includes US postage and handling)
<input type="checkbox"/> Courseware + Text International \$42.00 USD (Includes International postage and handling)

I. CEU Course Policies and Procedures

1. What if I need to cancel taking this course?	If you are unable to take a CEU Course that you have registered and paid for, then you must cancel 2 weeks (14 calendar days) before the first class or forfeit the entire class fee.
2. How to cancel taking this course – What to do: Go To: www.sszi.com/coursecancellation	1. Go To: www.sszi.com/coursecancellation 2. The following information must be included: Your Name, Your Telephone Number, Your e-mail Address, Date Course Begins, Name of Course, Course Instructor.
3. Confirmation of your Course Cancellation	You will receive a confirmation by email or regular mail that your cancellation has been received, and you will be asked to acknowledge that you have received this notice. ▪ If sent by email, we will use the email address that we have on file for you when you registered unless otherwise indicated.
4. Administrative Fee (for your course registration, un-registration, class logistics, coordination with instructor, etc):	There is a non-refundable \$35 administrative fee for each course that is cancelled regardless of when the cancellation is made.
5. Rescheduling Fee (rescheduling from one to another, logistics, coordination with instructor, etc.)	If you reschedule a substitute course <u>at the time you cancel your course</u> , you will pay only the rescheduling fee (\$25) and <u>not</u> incur the Administrative Fee above.
6. Refund Policy: This course is refundable – See Refund Terms	Refund Terms: If a refunded course fee is applicable, you will receive your refund within 30 calendar days of your cancellation notice. Not all courses are refundable.

J. CEU Course Evaluation REQUIRED

In compliance with IACET guidelines, prior to issuing your Continuing Education Units (CEUs), the SuperSlow Zone Institute (SSZI) is required to receive your completed assessment of the course you registered for and participated in. Your evaluation will be placed in your student file and a copy will be sent to Dr. Scott Preissler, Compliance Officer. Additionally your assessment will be used to give each instructor feedback on how registrants perceive him/her in teaching excellence. The confidential results of all evaluations will be tabulated and made available to faculty, through Continuing Education and Compliance (CECI) division of SSZI to help monitor the quality and outcomes of this instructional experience.