



MENNO HENSELMANS
— Science to master your physique —



COURSE GUIDE

www.MennoHenselmans.com

Hi there, it's Menno, your course instructor. In this course you'll learn how to design optimal training, nutrition and supplementation programs for muscle growth, fat loss and strength development. We'll also extensively go into food choices for optimal health, diet adherence and for the professionals, there are modules on physique sports, Powerlifting and marketing your business. Let's get you introduced.

Contents [\(click to jump to section\)](#)

How the course works	3
The community	3
Technical tips	3
The rules	5
a. Questions	5
b. Feedback	5
c. Case studies	6
d. Payment	7
e. Code of conduct	7
f. Copyright	8
Course outline	9
The exam	19
g. 1. Open book exam	19
h. 2. Exercise technique videos	21
Technical specifications	24
What to do in case of technical errors	24
i. 3. Coaching program design	25
Course contributors	27

How the course works

Every week I will post one or several modules of the course in the course Facebook group. In the Comments below this post we will discuss that module during the week. All bonus features, such as the live video Q&As, the meet-up and the exam will be announced and discussed in a post as well, so to follow the course, all you have to do is follow the Facebook group.

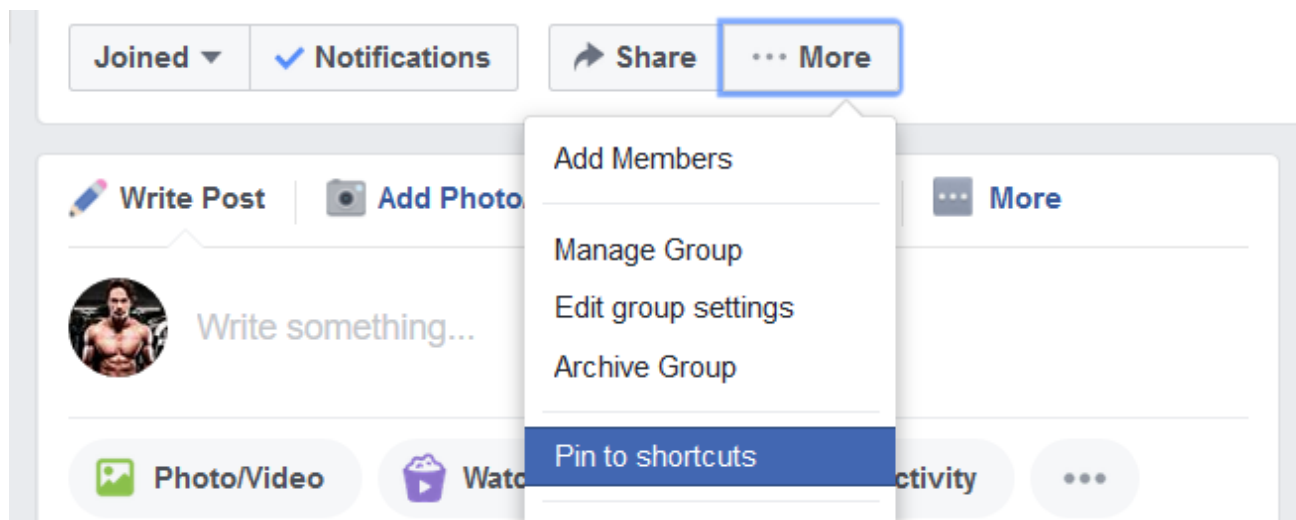
The community

Feel free to comment on all the topics! Many courses include world-class athletes, academics of various disciplines and personal trainers with decades of experience. Networking and interacting with your classmates can greatly enrich your experience of the course. Many people from previous courses have made long-term friends in this course.

Of course, it's also perfectly fine if you just want to lurk in the background and read the contents without interacting with the group.

Technical tips

To easily get into the course group, it's useful to create a shortcut that will get you into the group via a single click from your Facebook home page. The image below shows how you can do this.



Most course contents, including the document you're reading right now, have an index. If you open the Navigation Panel (Word) or Bookmarks (PDF) on the left, you will see the index. This makes it much easier to navigate the documents.

Most course documents are provided as PDF files or spreadsheets (e.g. calculators), in addition to an online Google file format. If you don't have software to open spreadsheets and PDF files, you can [download OpenOffice for free here](#).

Facebook also offers the following useful features:

- In-group live video Q&A.
- Easy file sharing.
- You can tag people you ask a question.
- Nested, live comments.
- You can subscribe to comment notifications by Liking a post and Unsubscribe by right clicking in the top right corner of a post.

The rules

Questions

There are a few rules to keep things organized.

To centralize the discussion, please stick to the topic of the week and post your questions and comments in the related post. Do not create separate posts for each question. It would quickly clutter up the course and every post you make sends a notification to every other student in the course.

If you have a question about a topic other than the weekly topic, check the course outline to see if it will be discussed later. It most likely will. There are also specific catch-up weeks in the course with a live Q&A video where you can ask questions about any previous topic.

For questions that are unrelated to any topic or just general banter, please use the Facebook course chatroom thread.

If I 'Like' an answer to a question without commenting, it means I agree with it and have nothing to add.

Feel free to answer other people's questions! I'm certainly not the only person in the group that can provide useful information and answering others' questions is a great way to test your own understanding of the materials.

Feedback

If you have extensive feedback about the course, complaints or anything you want to discuss privately, you can email Info@MennoHenselmans.com. Serious matters will be forwarded to me for resolution. Feedback from all sources, including an anonymous

survey, will be taken into account in the post-course evaluation to improve future courses. We strive to make each course better than the last.

Case studies

The exception to the rule of creating posts is posting case studies. A case study is a question that requires too much context to be answered in a single Facebook Comment.

If you have a client case study that you would like to share or want feedback on from the course members, you can post it in the Facebook group if you follow these rules.

1. Post it in a Q&A week. There's a week for nutrition Q&A and a week for training Q&A. You can see when these weeks are in the course outline.
2. Start the post with #CaseStudy and attach a document with as much information about the case as possible.
3. State your specific (!) question.
Example of a good question: How do I calculate this person's BMR?
Example of a bad 'question': Please design my client's program for me.
4. Include exactly what you think the answer to the question is. In the above example, include all your calculations with every intermediate step, not just "Is it 2043?"

Then we will discuss it together.

Note that a case study is for a highly specific question (or set of related questions) specific to a current course topic: we can't help you with "Please create an entire program for my client". Case studies amounting to a request for free program design will not be published.

If you have a personal question that does not benefit anyone else, e.g. a personal medical issue, you can email me at my clients-only email address

Coaching@MennoHenselmans.com.

Payment

Please make sure your payment is in order. If you are paying via Paypal and for whatever reason, like insufficient funds or an expired credit card, your payment profile is cancelled, you have to [re-register on our site](#) via the registration form and select Paypal as your payment method. Re-activating the old payment profile is often not allowed by Paypal. Make sure you let us know that you re-registered via Info@MennoHenselmans.com so that we can cancel your new payment in time, otherwise you'll be automatically overbilled(!)

If you pay via automated bank transfer, check that you've set up the automated payment profile correctly and it transfers the same amount every month with 'OUR' as the transaction cost option. If the payment isn't automated monthly with a constant amount, my bank may not register the payment.

For any questions about your payment, you can contact my administration at Info@MennoHenselmans.com.

Code of conduct

This should go without saying, but unprofessional, unlawful or severely unethical conduct will result in your removal from the course, the alumni network and a retraction of your certificate, if applicable. All certified graduates are expected to uphold a reputation as esteemed fitness professionals. We specifically do not condone black hat marketing, plagiarism, scams, sexism, racism or any practices that endanger your clients or result in a disproportionate number of client complaints. For the full code of

conduct we expect from you, see [The European Register for Exercise Professionals Code of Ethical Practice](#).

Copyright

All contents of this course are copyrighted by me. However, I'm perfectly ok with you sharing excerpts or quotes to friends or posting them online if you mention that it's from the PT Course [with a link](#).

For certain practical guides, I will note explicitly that you can share them with your own clients.

Happy learning!

Course outline

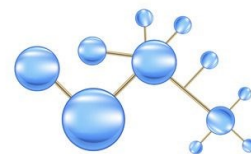
The updated course outline - when we will discuss what - can be found below. As new contents are posted, you will also see them pop up in the Facebook group's learning units. I'll generally post new modules on Friday morning so you can study them over the weekend.

To roughly summarize the course, the first part of the course deals with nutrition, the second part with exercise science and then several miscellaneous topics are discussed.

The course outline is subject to change based on feedback during the course, new additions and updates to incorporate new research.

Week 1

- How to study and do your own research
 - How to study for optimal comprehension and retention
 - How to find and read scientific papers
 - Understanding statistics
 - Improving your logical reasoning skills
- Biochemistry 101
 - How the body produces energy from proteins, carbohydrates and fats



Weeks 2 & 3

- Human metabolism
 - What is energy? Thermodynamics and energy balance
 - Determinants of energy expenditure, refeeds, set-point theory, metabolic damage, adaptive thermogenesis, reverse dieting and the yo-yo effect
- Optimizing energy intake
 - Cutting, bulking and body recomposition
 - How to optimize nutrient partitioning
 - How to estimate body fat percentage
 - Macro tracking: common pitfalls



- How to measure progression and body composition

Week 4

- Protein
 - Protein requirements
 - Protein quality
 - Vegetarians
 - Gender, PEDs, training volume
 - Surplus vs. deficit
 - Protein timing
 - Protein absorption limits
 - The anabolic window, fasted training & workout nutrition
 - Protein synching
 - Meal frequency



Week 5

- Carbohydrates
 - Types: simple vs. complex, GI, GL, II, fructose
 - Glycogen
 - Requirements per type of exercise
 - Carbohydrate timing
 - Effects on muscle growth
 - Dietary fiber
 - Carbohydrate tolerance



Week 6

- Dietary fat
 - Types: lipids, triglycerides, fatty acids
 - Health effects and functions of the different fatty acids
 - Cholesterol metabolism, health effects and optimal dietary intake
 - Brown fat
 - Effects on hormone production
 - Optimal intake for muscle growth

Week 7

- Ketogenic dieting
 - Ketosis levels, starvation mode and net carbohydrate intakes
 - Keto-adaptation and the keto flu
 - Effects on health, metabolism, appetite, performance and protein balance
 - Cyclical and targeted ketogenic dieting
 - Measuring ketosis
 - MCTs and exogenous ketones
 - Who is it for? Indications and contraindications
 - Implementation
- Live video Q&A



Week 8

- Fasting and circadian rhythm effects
 - Intermittent fasting & alternate day fasting
 - Protein sparing modified fasting
 - Circadian rhythm effects: timing considerations for the macronutrients
 - Carb backloading
 - Interaction effects between carbs and fats

Week 9

- Lifestyle factors
 - Circadian rhythm control
 - How to optimize sleep quality
 - How to manage stress
 - How to effortlessly increase your activity level



Week 10

- Beyond macros: micronutrition
 - Likely deficiencies
 - Bloodwork
 - Multivitamins: problems and benefits

- The functions of each micronutrient related to fat loss, muscle growth and performance
- How to fill in your micros

Week 11

- Health science and food choices
 - What makes a diet healthy?
 - Effects of food processing: heating, freezing, blending
 - Organic, wild and grass-fed
 - Low calorie sweeteners, sugar and dietary fiber
 - Food choices for health and anabolism: Meat, fish, poultry, dairy, eggs, grains, wheat, gluten, soy, coffee, fruits, vegetables, chocolate, coconut, nuts, alcohol
 - Detox diets
 - FODMAPs and digestive health
 - How to recover from illness

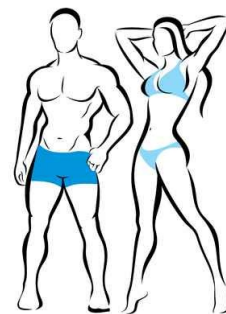


Week 12

- Ad libitum dieting: how to lose fat and gain muscle without tracking your macros
 - How to estimate diet satiety
 - Physiological vs. psychological regulation of hunger: eating speed, social effects, decision fatigue, sensory-specificity, portion size, biorhythm effects, exercise, sleep, body composition, palatability, meal frequency, sweeteners
 - Hunger management strategies

Week 13

- Contest prep and the peak week
 - Physique sports divisions
 - Carbohydrate loading
 - Electrolyte manipulation
 - Diuretics and water cutting
 - 'Shitloading'



- Posing

Week 14

- Beauty
 - Acne
 - Tanning
 - Cellulite
 - Hair loss
 - Dandruff



Week 15

- Supplements: a complete guide to every supplement worth knowing
- Hormones and drugs
 - Gender-specific regulation of sex hormones
 - Interpreting bloodwork
 - AAS: risk-reward and how to manage the side-effects

Week 16

- Nutrition case studies
- Live video Q&A

This marks the end of the nutrition part of the course. From here, we'll go into training topics and then at the end miscellaneous topics.



Week 17

- Muscle anatomy and contraction
- Understanding muscle growth & strength
 - mTOR, MPS, satellite cells, myonuclei, metabolic stress, muscle damage, hyperplasia, sarcoplasmic hypertrophy, GAS
 - Systemic and local growth regulation: structural balance theory
 - Strength vs. size & functional training

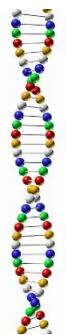
Week 18

- Cardio for fat loss
 - The fat burning zone
 - Fasted cardio
 - Estimating energy expenditure per activity
 - NEAT compensation
 - EPOC
 - How to mitigate the interference effect
 - HIIT vs. LISS



Week 19

- Program design fundamentals
 - Training intensity
 - Effects on fatigue, connective tissue and the nervous system
 - Strength vs. size
 - The muscle-specific hypertrophy method
 - Training volume
 - How to estimate recovery capacity
 - How to optimize training volume based on recovery capacity
 - Training frequency
 - Interaction with volume
 - Effects on recovery capacity
 - How often should you train each muscle?



Week 20

- Program customization
 - DNA testing
 - Maximum muscular potential and muscular balance
 - Work capacity

Week 21

- Fitness for women
 - Gender differences
 - Contraception
 - Pregnancy
 - Menstrual periodization
 - Breast implants
- Fitness for the elderly and youth
 - Sarcopenia
 - Anabolic resistance



Week 22

- Muscle functional anatomy: a visual guide
 - Ab training and spot reduction

Weeks 23 & 24

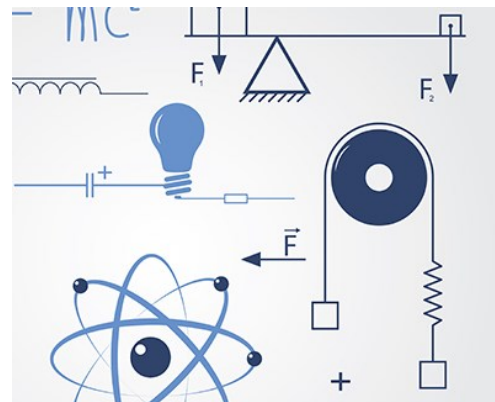
- Exercise selection
 - Muscle functional anatomy: a visual guide
 - What makes an exercise effective for muscle growth?
 - Free weights vs. machines
 - Compound vs. isolation exercises
 - Accommodating resistance: biomechanics, bands and chains
 - Recommended exercises and technique guide
 - Counting volume: how much does a certain exercise stimulate a certain muscle?
 - Synergistic exercise selection: functional differentiation and how many exercises you should do per muscle

Week 25

- Exercise technique & cueing
 - The mind-muscle connection
 - Strength vs. size
- Repetition tempo

Week 26

- How to structure your workouts
 - Rest intervals
 - Active recovery
 - Exercise ordering
 - Circuit training, (antagonistic) supersets and paired sets
- Live video Q&A



Week 27

- Periodization and progression
 - Progressive overload and progression models
 - What is fatigue?
 - Cybernetic/autoregulatory, undulating and linear periodization
 - Benchmarking and autoregulation
 - Overtraining, overreaching and deloading

Week 28

- Training to failure
- Advanced strength training techniques
 - Forced reps and drop sets
 - RPEs and velocity monitoring
 - Reverse pyramiding, cluster sets and myo-reps
 - Weighted stretching
 - Eccentric overloading
 - Post-activation potentiation
 - KAATSU/blood flow restriction training

- Breathing techniques

Weeks 29 & 30

- Stretching
- Postural correction
- Warming up
- Injury management
 - Injury diagnosis, treatment and active recovery
 - Pain science
 - Ice vs. heat, NSAIDs and RICE
 - Rehabilitative equipment: braces, sleeves, tape
 - Foam rolling and massage
 - Chiropractic
 - Common injuries of each body part and how to treat them



Week 31

- Training gear
 - Weightlifting belts
 - Footwear: what to wear in the gym
 - Knee wraps
 - Lifting straps



Week 32

- Powerlifting
 - Strength vs. size program design
 - Peaking & tapering
 - Powerlifting technique
 - Selecting a competition

Week 33

- Training program case studies

- Live video Q&A

Week 34

- Adherence: the psychology of how to stick to your diet and exercise program
 - Psychological effects of nutrition
 - Willpower
 - The psychology of coaching
 - Blood sugar
 - Calorie cycling
 - Goal setting
 - Cheat meals
 - Diet breaks
 - Social eating events
 - How to deal with social pressure
 - Food cravings
 - Flexible dieting and meal planning
 - Assessing client adherence and motivation

Week 35

- How to create a successful PT business
 - Marketing
 - Advertising

Week 36

- Exam preparation time with open Q&A
- Live video Q&A

7 & 8 August 2022

- Exam



The exam

“Do I have to remember all of this?” you may ask yourself at times during the course. This is a course for grown-ups, so in principle the answer is simple: remember what you like. However, there is of course the exam for those that want to get certified. To know which contents you have to remember for the exam, you can apply a 2-step rule.

1) Would I ever have to explain this to a client as an evidence-based PT?

If so, 2) can I easily look this up?

If not, you have to remember it. If you can easily look it up or it's the kind of information you don't need regularly in practice, all you have to remember is where you can look it up in the course. Just like during the practice of personal training, you are allowed to access all course materials during the exam ('open book' exam).

The exam consists of 3 parts: a theoretical exam, exercise technique checks and the creation of a full coaching program for a mock client.

If you pass the exam, you'll become a Henselmans Certified Personal Trainer and you'll receive a premium print quality physical certificate via First Class Royal Mail. If you have an active fitness business, you can also put yourself on our [directory of Henselmans Certified Personal Trainers](#). The exam will be graded within 1 month after completion.

1. Open book exam

To test if you have the requisite knowledge to become a Henselmans Certified Personal Trainer, you'll have to take an online exam. The exam is conducted using ProProfs web software (the same as used for the optional interim exams after most modules). You can access the web app with any browser, so you can be anywhere you want. However, you will be required to identify yourself with your webcam or camera and present identification to verify it's you.

You have the entirety of 2 calendar days, the weekend of **7 & 8 August 2022**, Amsterdam (GMT+1) time zone, to complete it (48 hours). If you take a break, however, ensure that your internet connection is stable and your browser remains open. We recommend you use Mozilla Firefox, Google Chrome, Microsoft Edge or Safari Web Browser as your internet browser on a laptop or desktop computer. If you close your browser for whatever reason, you will lose all your data and you will have to start over(!) There is nothing we can do to prevent client-side problems like this, so prepare properly.

It takes many people over 6 hours to complete the exam, so make sure you schedule enough time in your agenda.

There are no resists. You can only submit one exam attempt in each course.

If you don't want to take the exam this round, you can postpone it to the next course round (as often as you want) by posting it in the exam thread that will be created in the Facebook group. If you don't post that you're postponing and don't submit the exam, you'll fail the exam.

The access information for the exam will be posted in the course Facebook group before the exam starts.

The exam consists of 70 randomized questions from a large database with the following formats: true/false, checkbox, fill-in-the-blank, multiple choice and essay/open.

After the exam, we'll anonymously grade all the answers and you get a Latin grade based on your percentage of points achieved from the possible total assigned. If these numbers seem low, note that we employ negative grading, so the expected percentage

points for taking an exam purely by random guessing is 0%, e.g. a 10-point multiple choice question with 4 options has a $10 / 4 = 2.5$ -point penalty for wrong answers.

- 0-39%: fail
- 40-79%: pass
- 80-84%: cum laude
- 85-94%: magna cum laude
- 95-100%: summa cum laude

Each exercise technique video with improper form from the practical part of the exam imposes a 25% point penalty on the theoretical part, e.g. if you scored 75% on the theoretical but showed poor exercise technique during 1 of the technique checks, your total score will be 50%.

~97% Of students who take the exam achieve a passing mark or higher.

2. Exercise technique videos

To become a Henselmans Certified Personal Trainer, it is imperative that you can demonstrate proper exercise technique. At some point during the online exam, you'll be asked to upload 4 videos demonstrating good form during at least 3 repetitions of each of the following 4 exercises. Each video should show your entire body during the entire repetition without any supportive training gear: no powerlifting belt, Olympic weightlifting shoes or knee/elbow wraps. Knee/elbow sleeves are fine.

1. Either a powerlifting or Romanian deadlift.

Video angle: straight from the side or slightly diagonal. Your hips should be visible during the full repetition.

Technique criteria:

- a. Your lumbopelvic complex stays near anatomical position (neutral).
 - b. Full hip lock-out occurs at the top.
 - c. You keep the bar roughly over your center of gravity, normally meaning your (mid)feet.
- 2. Squat: Either the powerlifting squat or a front squat.
 Video angle: straight from the side or slightly diagonal. Your hips be visible during the full repetition.
 Technique criteria:
 - a. No notable posterior pelvic tilt or spinal flexion occurs during the exercise: you retain roughly anatomical lumbo-pelvic posture.
 - b. You hit parallel (at a minimum).
 - c. There is no major knee valgus (caving).
 - d. You keep the bar roughly over your center of gravity, i.e. roughly over the (mid)feet.
- 3. Barbell standing overhead press (Military)
 Video angle: diagonally from the front. Your hands and hips should be visible during the full repetition.
 Technique criteria:
 - a. You achieve full Olympic lock-out.
 - b. The bar touches your chest or clavicle in the bottom.
 - c. You keep your elbows roughly below the barbell.
 - d. There is no excessive lumbar spinal extension.
 - e. You do not use any leg drive.
- 4. Powerlifting bench press.
 Video angle: diagonally from the front. Your hands and hips should be visible during the full repetition.
 Technique criteria:
 - a. The bar touches your chest or abdomen in the bottom.
 - b. You reach full elbow lock-out at the top.

- c. Your scapulae stay retracted and your thoracic spine stays extended throughout the whole set.

Essentially, the video should be able to serve as a textbook demonstration of good technique for that exercise.

In addition to the above criteria, reasonable control over the weight, balance, maximum range of motion and symmetry are important for all exercises. For the powerlifts, [IPF Powerlifting rules](#) also apply (pp. 17-19). Exercise load, repetition tempo and your lifting attire are not graded (but may earn you style points).

At the start of at least one video, your face must be clearly visible and you must clearly present an official form of identification to the camera (e.g. driver's license, passport or government ID). If you are not clearly identifiable as the same person in any other video, you must also identify yourself in that video. If there are other people than you identifiable in the video or involved in the creation of the video, including any camera operator, you need to obtain written consent from them and inform them the video may be watched by any course tutor or administrator.

If you have a medical pathology reasonably preventing you from the proper execution of one of the exercises, please list this instead of the video and provide formal proof thereof (e.g. a doctor's note or an x-ray).

Please check your submission fulfills all the above requirements before you upload it during your exam. Watch each video and compare it to a video demonstration of that exercise from the course. Could your video replace that video? If not, make a better one. There are no resits for the exam.

Technical specifications

All 4 videos should each be fewer than 100 MB in size, have a minimum resolution of 640x480 and be no longer than 2 minutes in duration. All videos should be unedited and have intact meta data (if you don't know what these are, they should be intact, as they're automatically created) so we can see the creation time.

What to do in case of technical errors

If a technical problem prevents you from uploading the videos during the exam, you can email them to Info@MennoHenselmans.com. First, upload each video to Youtube, Google Photos/Drive, Vimeo or Dropbox without a password. Then, put 4 hyperlinks to the 4 uploaded videos in one email sent to Info@MennoHenselmans.com with the subject 'PTC Technique Exam: [your name]'. Use the following template for your email.

From: [your registration email address]

To: Info@MennoHenselmans.com

Title: PTC Exam technique video submission

Hello,

Here are my technique videos for the PTC exam, along with a copy of the ID I show in the video.

Deadlift: [link]

Squat: [link]

Overhead press: [link]

Bench press: [link]

ID: [link or attachment]

All persons involved or shown in these videos have provided written consent for their involvement. The videos or their metadata have not been edited in any way.

Regards,

[your full legal name]

Do not send the videos as file attachments.

The email should be sent from the email address you registered with for the course.

3. Coaching program design

To become a Henselmans Certified Personal Trainer, you need to have experience creating fitness programs. You therefore have to upload 2 full programs at some point during the exam. The programs should include everything a client would need to get started to achieve their goals. We recommend that you create 1 program for yourself and 1 program for someone you know in person. This can be a friend or family member, but in principle you can create programs for any 2 individuals, including any current Personal Training or other clients, if you already have those. If you cannot find anyone, let us know and we will pair you up with a course member or a volunteer. Essentially, you'll mock-coach them for the duration of the course.

Concretely, you'll need to implement the learning objectives provided at the end of most modules to yourself and your mock client. For example, for the Energy module you'll need to calculate the person's energy expenditure and target energy intake and for the Exercise Selection module, you'll need to recommend which exercises the person should do. Module by module, you will create an entire fitness program for the person and yourself this way.

Write out all calculations and your thought process for every decision you make.

At the end of the course, collect everything into 1 document, saved as a Portable Document Format (PDF). In addition to the specific steps of the program from each module, write up your final recommendations exactly as you would for a client. You can use the provided spreadsheets and case studies from the course as a template for this. However, you can only upload 1 file for each program (so 2 files total). If you created additional files, such as a spreadsheet, you can link to those from within the uploaded file. You have full discretion over exactly how you present the program. Imagine you're a client receiving your program: does it contain everything you need to get started on your fitness journey?

The programs should follow the spirit of the course guidelines. Since program design is part science and part art, for many aspects of a program there are no hard right or wrong answers. As long as your choices are reasonable, you will pass. If your choices are clearly unreasonable or not in line with the course recommendations, we may deduct up to 50% points from your exam score.

Good luck and enjoy the course!

Course contributors

The Henselmans PT Course is officially authored by the following people, in alphabetical order.

- [Anastasia Zinchenko](#): researcher, writer, editor
- [Antoine Fombomme](#): tutor of the French PT Course, editor
- [Fredrik Tonstad Varvik](#): researcher, writer
- [Joe Flaherty](#): editor, writer
- [Luis Villasenor](#): tutor of the Spanish PT Course, editor
- [Menno Henselmans](#): founder, chief editor & creator
- [Nevin Barnett](#): tutor of the French PT Course, editor
- [Reinier de Wit](#): researcher
- [Richard Bell](#): tutor of the Dutch PT Course
- [Sanne Leenman](#): recruitment consultant
- [Sten van Aken](#): researcher
- [Stijn van Willigen](#): editor, researcher, graphics designer
- [Thomas Campidell](#): researcher, writer, tutor of the German PT Course
- [Vincent Huisman](#): writer (business module only)