



INDN252

Design Physiology

Course outline Trimester 1, 2013

GENERAL

Elective; Trimester One; 20pts

ASSESSMENT

100% internal by assignment

CLASSTIMES AND LOCATIONS

LECTURE:	Tuesday	11:30am – 12:20pm	Room: VS204
STUDIO:	Tuesday	12:40pm – 14:40pm	Room: Wig 301
	Friday	12:40pm – 14:40pm	Room: Wig 204
LAB:	Friday	11:30am – 12:30pm	Room: VS 221 & VS 001 Ergonomics Lab

COORDINATOR

Coordinator

Name Bernard Guy

Room: VS2.33

Phone: 463 6291

Office Hours Thursday 1:40-2:40pm

Email: Bernard.guy@vuw.ac.nz

For Tutor details please visit the course blog via: <http://schoolofdesign.ac.nz/>

Please make sure you read any e-mail communications from the SOD Design Physiology News as these may include important updates on class arrangement location etc.

COURSE SYNOPSIS

INDN 252 design physiology compliments your established methods of enquiry with a human focused approach committed to understanding human physicality within the context of industrial design. The basic principles of human factors are introduced through a range of studio and laboratory experiments, leading to the engagement of new technologies in design experiments.

AIMS OF THE COURSE

The central aim of the course is to inform and engage students in a human focused approach to design. The course will focus on physiology as a fundamental and essential tool in the creation, advancement and validation of design concepts. You will be required to examine the human body in great detail and the physiological and psychological relationship between people, objects and environments.

COURSE LEARNING OBJECTIVES

INDN 252 is a studio-based course with weekly lectures and laboratory sessions. It is fundamentally human focused in approach. This course requires students to investigate human and object physiology through experimentation, developing a personal position on the role physiology has in creating, informing and validating design concepts.

By the end of the course, students will have learned to:

Creative & Critical Thinking

- Understand the sourcing, application and capability of qualitative and quantitative data.
- Explore the diversity of human proportion and sizes as a broad cross section of the population, and methods of categorizing these people into specific groups.
- Understand the physicality of the human body related to mechanical and biological principles and its translation and awareness to design

Communication

- Transfer and integrate investigative data as design responses, incorporating modelling, photographic, digital, hand-work, drawing and graphics.
- Develop and utilise a variety of methods and techniques for the recording, prototyping and representation of physiological data and experimental ideas.
- Formulate and advance a hypothesis or design question in 3 and 4 dimensional composition.

Leadership

- Develop an evolving yet firm commitment towards design, and to demonstrate that commitment through a willingness to explore design concepts, develop design skills, and produce coherent design arguments.

COURSE CONTENT

As you progress through the course you will:

- Initially focus on your own body as a static examination to reveal and quantify specific anomalies and mutations.
- Examine specific groups of the general population and established methods of measurement.
- Examine your own physiology and biomechanics of movement through digitally printed prototype assemblies
- Explore through participation how people dynamically interact with objects and environments including the range of methods that may be applied to record, analyse and evaluate existing designs.
- Conclude with a design response to new or adapted physiology utilising developed design methods

COURSE DELIVERY

INDN 252 is a studio-based course taught through lectures, labs, studio tutorials and field trips. Attendance and participation in all scheduled sessions is expected (see mandatory requirements).

All Course materials, project descriptions, important dates, reference materials and required readings will be available on the course blog, located on the School of Design Teaching and Learning website, see:

<http://schoolofdesign.ac.nz>

ASSIGNMENTS/PROJECTS

Assignment work in INDN 252 will be all project-based. Two intensive projects will be undertaken during the course. The two projects comprising of experiments systematically build upon one another, strengthening the student's ability to successfully engage progressively more complex and sophisticated design challenges.

THE ULTIMATE GOALS OF THE TWO PROJECTS ARE TO:

- Create an awareness and relevance of human physicality in the design process.
- Develop competency in the application of existing test procedures and the creation of new test procedures and related methodology.
- Establish a commitment to measuring, documenting and validating design concepts from a human focused perspective.

A BRIEF DESCRIPTION OF EACH PROJECT FOLLOWS:

PROJECT 1 Understanding the complexities of human physiology.

Experiment 1A: **Personal Physiology** Measurement and recording of a human attribute, revealing and recording anomalies and mutations. This experiment explores in great detail methods of recording, analysing and categorising your own body. From this you will explore how individuals are grouped and measured to establish relevant and workable parameters and design goals.

Experiment 1B: **Prototyping Physiology** Precise measurement and recording of the mechanics of your body to reproduce design prototypes. This experiment explores the human body's anatomy and movement through observation, measurement and prototyping

PROJECT 2 Exploring the application of physiology in the design and development of a product through experimentation.

Experiment 2A: **Anatomical Tolerance** Measuring anatomical, physiological and material relationships. This experiment explores the relationship and complexity of design between anatomy and an object

Experiment 2B: **The Second Skin** Adapted physiology. This experiment explores the physical representation and evaluation of new anatomy and physiology

ASSESSMENT REQUIREMENTS

Assessment Criteria specific to individual projects will be listed in each Project Outline. Overall Assessment Criteria for this course are:

- Understanding of anthropometric data, how it can be applied and it's limitations.
- Clarity in the graphical representation of anthropometric/design data and conclusions.
- Comprehension of the physical limits and related movements of the human body.
- Analytical and critical approach to the testing of ergonomic and physiological issues.
- Evidence of design physiology being used to inspire and validate designs.
- Comprehension of the relationship between psychology, physiology and design.

INDN 252 is internally assessed by assignment work in the form of 5 Experiments (2 projects). Each is assessed and graded A+, A, A-, B+, B, B-, C+, C, D, E, (where C is a PASS). Grades only are issued to students. The final grade for the course is based on the aggregation of the percentage marks for each of the projects, and a final grade of C or better is required to pass the course. The 2 projects (4 experiments) contribute towards the final course grade as follows:

Project	Experiment	Duration	Due	Value
<u>Project 1</u>				
Exp 1A	Personal Physiology	1 week:	12 th March	10%
Exp 1B	Prototyping Physiology	5 weeks:	5th April & 19 th April	35%
<u>Project 2</u>				
Exp 2A	Anatomical Tolerance	2 weeks:	3 rd May	20%
Exp 2B	The Second Skin	5 weeks:	7 th June	35%
Total:				100%

The School has a long tradition of providing *critical review* of student work as it progresses especially in design projects. This is part of feed-back for learning purposes. Such reviews must not be misunderstood as indicators of standards and they are different from *assessment*. Students have a responsibility to attend critical reviews at the appointed time as part of the learning process. Review panels are often composed of internal and external members for the appointed times and cannot be re-composed to consider late submissions. Consequently late work will not receive a critical review, though it will be assessed subject to any penalties as set out below.

- **Critical Review:** May take place during the development phases of a project as well as at the time of the final submission. Its purpose is to identify strengths and weaknesses in the work and to offer

suggestions to generally encourage the student. An encouraging critical review does not necessarily mean a good assessment result.

- **Assessment:** May take place at a stage in a project or on final submission (or both). Its purpose is to assess the work in terms of the objectives stated in the handout and to express this as a grade. Moderation of all assessment in design is undertaken at the end of the Trimester after critical reviews, involving a wider group of staff than the immediate lecturers in the course. This process ensures fairness.

All grades posted during this course are only provisional results until confirmed by the School Examiners Committee which meets after the examination period.

PENALTIES

Students are required to personally present their work on time at all scheduled reviews and in the location and specified format as set out in project outlines. Except in emergency situations failure to personally present work at any scheduled graded review will result in an automatic failing grade of E for the work being reviewed, unless an extension has been approved in writing in advance by the Course Coordinator.

Late submissions will not be penalised in the event of illness or other extraordinary circumstances provided students have submitted a request for an extension and received approval in writing from the Course Coordinator (see the Student Administration Office for an Application for Extension form). The extension must be approved in advance of the scheduled review or hand-in except in situations where the nature of the illness or other circumstance prevents this. Work submitted late without the prior agreement of the Course Coordinator will be penalised by a failing grade of E. Furthermore, if work is not handed in within 5 working days of the review without the prior agreement of the Course Coordinator it will be recorded as a non submission.

Work submitted late **must** be submitted directly to the Course Coordinator. Any project work left on the project shelves or elsewhere will be entered on the grade sheet as a no-submission

ATTENDANCE AND PARTICIPATION

Attendance and participation is an important aspect of the learning process, and you are required to attend all lectures and tutorials.

If extraordinary circumstances arises that require you to be absent from some class sessions, you should discuss the situation with the Course Coordinator as soon as possible.

The design studio operates at three levels of instruction: the whole class, the tutorial group, and the individual. The studio thus involves both collective and individual participation from individuals in the group. Tutors will be in the studio at all scheduled times undertaking group and individual instruction and reviewing project work. Ongoing discussion will be critical to the development of your design work.

Therefore, for the studio to operate effectively, students are expected to arrive on time, to be present for the whole studio session, (unless there are reasons why they cannot) and to actively participate in group and one-to-one discussions with your tutor. It is also expected that students will bring to the studio sessions the appropriate equipment and supplies needed to work productively on the design projects and to complete this project work on time. The intensity and regularity of participation in the studio is unerringly reflected in the understanding and quality expressed in the resulting work.

Students are expected to maintain an acceptable level of cleanliness and tidiness in the studio as outlined in the Studio Culture Policy which is displayed in all studios.

COURSE EXPECTED WORKLOAD

You should be expect to spend of around 200 hours on this course, including both scheduled class time and independent study. Typically this involves around 20 hours per week during the twelve teaching weeks, with the balance during the mid trimester break, study week, and examination period.

http://www.victoria.ac.nz/home/about_victoria/avcacademic/publications/assessment-handbook.pdf

MATERIALS AND EQUIPMENT REQUIRED

Additional expenses may be involved in this course, 3D printing is mandatory for many of the projects and this has an associated cost and students would expect to spend in the region of \$200-\$300 on printing.

Students will need to provide all materials and equipment as necessary for the completion of required work.

It is recommended that you have your own laptop although computer facilities are available at the School. If you are purchasing a laptop and would like information on the minimum requirements please contact the Student Administration Office. While digital cameras are available at the school, it is also recommended that students consider purchasing a reasonable digital camera with macro (6mpxl minimum). Note: The Student Loan, administered by StudyLink, allows students to claim up to \$1000 for course related costs for each year of study.

READING AND REFERENCE MATERIAL

<i>Author</i>	<i>Title</i>	<i>Call No.</i>
Dreyfuss, Henry	Measure of Man. Human Factors in Design.	TA166 M484
Dul,J & Weerdmeester,	Ergonomics for Beginners.	TA166 D878 E
Panero, Julius	Human Dimension & Interior Space.	NA2542.4 P191 H
Pheasant, Stephen	Bodyspace	TA166 P537 B 3ed
Roberst & Tomlinson	The Fabric of the Body	R836 R645 F
Greene, David Paul.	Kinesiology	QP303 G799 K 2ed
Calais-Germain, Blandine.	Anatomy of movement	QP301 C141 A E

Saladin, Kenneth S.	Anatomy & physiology	QP34.5 S159 A 4ed
McCracken, Thomas	New Atlas of Human Anatomy.	QM25 N532
Simblet, Sarah.	Anatomy for the Artist	NC760 S588 A
William Myers	Bio design. Nature + technology + creativity	TK173.8 . M9477 2012
Vogel Steven	Cats' paws and catapults : mechanical worlds of nature and people	QH513V879C
<i>Periodicals</i>	All periodical can be loaned for 3 days	
	Human Factors	
	Applied Ergonomics	
	Viewpoint	
	Axis	
<i>Novels</i>		
Kureishi Hanif	The Body	

RECORDING OF WORK AND PORTFOLIO

You are strongly encouraged to respect and care for your work, making and recording a visual summary of each project in this course. This may be in digital and/or hard copy. The principal purpose of this is to maintain a record of your work for incorporation into your own personal "Design Portfolio". Recording a summary of your work also means it is available if needed for you or the School to exhibit or publish.

SUBMISSION OF WORK

Each student is responsible for ensuring their work is submitted to their course tutor or Course Coordinator on time and in the required format.

Late submissions will be penalised as set out above, unless an extension is approved by the Course Coordinator

EXTENSIONS

In the event of illness or other extraordinary circumstances that prevent you from submitting a piece of work on time, or that you feel adversely affect the quality of the work you submit, it is important that you discuss your circumstances with the Course Coordinator as soon as possible so that appropriate arrangements

may be made. You should complete an Application for Extension form (available from the Faculty Office) for the Course Coordinator to approve. You will also need to provide suitable evidence of your illness or other circumstances. In an emergency, or if you are unable to contact the Course Coordinator, you should advise the Faculty Office of your situation. Work submitted late must be submitted to the Course Coordinator.

MANDATORY COURSE REQUIREMENTS

In order to pass the course you must also satisfy the following mandatory course requirements:

- Attend and present your project work at all scheduled critical reviews

SCHEDULE OF SESSIONS (Assessments to be noted)

Week Month	Day	Date	Item	Location	Time	Comments
Week 9 February	M	25				
	TU	26				
	W	27				Orientation Week
March	TH	28				
	F	29				
Week 10 March	M	4				Trimester 1 Begins
	TU	5	Lecture Studio	VS204 Wig 301 VS 001 Ergo Lab	11:30 -12:20 12:40 -2:30	General overview of the course <i>What is physiology?</i> Hand-out & Discuss Exp 1A Physiology Lab Introduction to the cyclorama, percentiles and Individual images Lab Induction
	W	6				
	TH	7				
	F	8	Lab Studio	VS204 Wig 301 VS 001 Ergo Lab	11:30 -12:20 12:40 -2:30	Group instruction, human physiology Individual instruction: Addition of data and measurements to images
	M	11				
Week 11 March	TU	12	Lecture Studio		11:30 -12:20 12:40 -2:30	Anthropometrics and biomechanics: <i>Measuring methods and methodologies</i> Hand out & Discuss Exp 1B Review Submit Exp 1A 10%
	W	13				
	TH	14				
	F	15	Lecture Studio		11:30 -12:20 12:40 -2:30	Dissection KK518 11.30am – 2.40pm.
	M	18				
Week 12 March	TU	19	Lecture Studio		11:30 -12:20 12:40 -2:30	Musculoskeletal: <i>Under the Skin</i>
	W	20				
	TH	21				
	F	22	Lab Studio		11:30 -12:20 12:40 -2:30	
	M	25				
Week 13 March	TU	26	Lecture Studio		11:30 -12:20 12:40 -2:30	Individual and group instruction
	W	27				
	TH	28				Extended Easter Break begins

	F	29				Good Friday – holiday
Week 14 April	M	1				Easter Monday – holiday
	TU	2				Easter Tuesday – VUW holiday
	W	3				Extended Easter Break
	TH	4				
	F	5	Lecture Studio		11:30 -12:20 12:40 -2:30	Individual and group instruction Review UP prints for Exp 1B
Week 15 April	M	8				
	TU	9	Lecture Studio		11:30 -12:20 12:40 -2:30	<i>Too big, too small, just right?</i> Size / growth / aging
	W	10				
	TH	11				
	F	12	Lecture Studio		11:30 -12:20 12:40 -2:30	Scanning Hand out & Discuss Exp 2A
Week 16 April	M	15				
	TU	16	Lecture Studio		11:30 -12:20 12:40 -2:30	The dynamic nature of physiology
	W	17				
	TH	18				
	F	19	Lecture Studio		11:30 -12:20 12:40 -2:30	Physiology and Craft Review, Present Exp 1B 35%
Week 17 April	M	22				Mid-trimester Break
	TU	23				
	W	24				
	TH	25				ANZAC Day - holiday
	F	26				
Week 18 April May	M	29				
	TU	30	Lecture Studio		11:30 -12:20 12:40 -2:30	Hand-out & Discuss Exp 2B
	W	1				
	TH	2				
	F	3	Studio		11:30 -12:20 12:40 -2:30	Review, Submit Exp 2A 20% (send files for printing) Review, Present Exp 1B 35%
Week 19 May	M	6				
	TU	7	Lecture Studio		11:30 -12:20 12:40 -2:30	Experiments in Psychology (Harvard)
	W	8				
	TH	9				
	F	10	Lab Studio		11:30 -12:20 12:40 -2:30	Field trip (TBA)
Week 20 May	M	13				
	TU	14	Lecture Studio		11:30 -12:20 12:40 -2:30	
	W	15				
	TH	16				
	F	17	Lab Studio		11:30 -12:20 12:40 -2:30	Individual and group instruction
Week 21 May	M	20				
	TU	21	Lecture Studio		11:30 -12:20 12:40 -2:30	New Physiology
	W	22				
	TH	23				
	F	24	Lab Studio		11:30 -12:20 12:40 -2:30	Individual and group instruction
Week 22 May	M	27				
	TU	28	Lecture		11:30 -12:20	Error and assumptions: <i>Interface Design</i>

June			Studio		12:40 -2:30	/ Controls Individual and group instruction
	W	29				
	TH	30				
	F	31	Lab Studio		11:30 -12:20 12:40 -2:30	
Week 23 June	M	3				Queen's Birthday - holiday
	TU	4	Lecture Studio		11:30 -12:20 12:40 -2:30	Handicapped to Super human Biological Design
	W	5				
	TH	6				
	F	7	Studio	TBA	11:30 -2:30	Review Present Exp 2B 35%
Week 24 June	M	10				Study/Examination Period
	TU	11				
	W	12				
	TH	13				
	F	14				

COMMUNICATION OF ADDITIONAL INFORMATION

Any changes or additions to this Course Outline will be discussed and agreed with the class, and conveyed via email or through the course blog on the School of Design Teaching and Learning website <http://schoolofdesign.ac.nz>.

CLASS REPRESENTATIVES

The Faculty of Architecture and Design operates a system of Class Representatives in 100-level courses, and Year Representatives in each of the professional disciplines. Student Representatives are elected during a class session in the first week of teaching. All Student Representatives will be listed on the STUDiO notice board in the Atrium, and the relevant Representatives are also listed on studio notice boards. Student Representatives have a role in liaising between staff and students to represent the interests of students to the academic staff, and also in providing students with a communication channel to STUDiO and the Student Representation organiser.

ACADEMIC INTEGRITY AND PLAGIARISM

Academic integrity means that University staff and students, in their teaching and learning are expected to treat others honestly, fairly and with respect at all times. It is not acceptable to mistreat academic, intellectual or creative work that has been done by other people by representing it as your own original work.

Academic integrity is important because it is the core value on which the University's learning, teaching and research activities are based. Victoria University's reputation for academic integrity adds value to your qualification.

The University defines plagiarism as presenting someone else's work as if it were your own, whether you mean to or not. 'Someone else's work' means anything that is not your own idea. Even if it is presented in your own style, you must acknowledge your sources fully and appropriately. This includes:

- Material from books, journals or any other printed source
- The work of other students or students or staff
- Information from the internet
- Software programs and other electronic material

- Designs and ideas
- The organisation or structuring of any such material

Find out more about plagiarism, how to avoid it and penalties, on the University's website:

www.victoria.ac.nz/home/studying/plagiarism.html

USE OF TURNITIN

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an online plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and subject to checking by Turnitin. Turnitin will retain a copy of submitted material on behalf of the University for detection of future plagiarism, but access to the full text of submissions is not made available to any other party.

GENERAL UNIVERSITY POLICIES & STATUTES – WHERE TO FIND MORE DETAILED INFORMATION

Students should familiarise themselves with the University's policies and statutes, particularly the Assessment Statute, the Personal Courses of Study Statute, the Statute on Student Conduct and any statutes relating to the particular qualifications being studied; see the *Victoria University Calendar* or the University's policy website <http://www.victoria.ac.nz/home/about/policy>

Student and staff conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps are to be taken if there is a complaint. For information about complaint procedures under the Statute on Student Conduct, contact the Student Interest and Disputes Resolution Advisor or refer to the statute on the Victoria policy website at: <http://www.victoria.ac.nz/home/about/policy>

The Policy on Staff Conduct can also be found at: <http://www.victoria.ac.nz/home/about/policy>

Academic grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned; class representatives may be able to help you in this. If you are not satisfied with the result of that meeting, see the Head of School or the relevant Associate Dean; The Student Interest and Dispute Resolution Adviser is available to assist in this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievance Policy which is published on the Victoria website at: <http://www.victoria.ac.nz/home/about/policy>

There is also a leaflet explaining the grievance process available from the Academic Office website at: http://www.victoria.ac.nz/home/about_victoria/avcacademic/Publications.aspx#grievances

Students with Impairments

Refer to the [Meeting the Needs of Students with Impairments Policy](#), available on the University's policy website <http://www.victoria.ac.nz/home/about/policy>

The University has a policy of reasonable accommodation of the needs of students with impairments. The policy aims to give students with disabilities the same opportunity as other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, please contact the course coordinator as early in the course as possible. Alternatively, you may wish to approach a Student Adviser from Disability Services to discuss your individual needs and the available options and support on a confidential basis. Disability Services are located on Level 1, Robert Stout Building; telephone 463-6070 email: disability@vuw.ac.nz

Information regarding support is available from the Faculty Office reception desk.

Student Support

Staff at Victoria want students to have positive learning experiences at the University. There are a number of support services available to help you directly if your academic progress is causing concern or if there are elements in your life that are affecting your ability to study. These include:

- Your course coordinator or programme director;
- Staff in your Faculty Student Administration Office Student Dedicated learning support through Student Learning Support Service; Kaiwawao Māori; Maanaki Pihiphipinga; Disability Support Services and Victoria International;
- Wider holistic support through the Health Service; Counselling Service; Financial Support and Advice; Accommodation Service and Career Development and Employment. Find out more at www.victoria.ac.nz/st_services/ or email student-services@vuw.ac.nz;
- VUWSA employs a Student Advocate who deals with academic problems and provides support, advice and advocacy services, as well as training and supporting class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building. Email education@vuwsa.org.nz or tel. 463-6716 or 463-6984.

TE ARO CAMPUS BUILDING RULES AND FACILITIES

Students on the Te Aro Campus are required to comply with the Faculty Guidelines relating to the safe use, access and care of the Architecture and Design technical resources and building facilities. These are available on the School website, and in the following documents available from the student R drive:

<R:\Student Health and Safety Information>

FAD Health & Safety Handbook – <http://www.victoria.ac.nz/fad/facilities/3d-model-workshops.aspx>

- Workshop and campus safety
- Safety training and safety precautions for the workshops
- FAD hazard Register
- Te Aro Campus floor plans

FAD Technical Services and Facilities Handbook – issued to all staff and available to all students on the student R drive, covering various local practices, including information on:

- Information for new staff and students
- Access and booking of teaching/studio spaces, and technical resources
- Studio etiquette and rules pertaining to exhibitions, critiques and storage of models/drawings

- Housekeeping/cleaning within the studios and workshops
- Information on Te Aro IT systems and support
- Te Aro campus floor plans

General information on Faculty/School Technical Facilities including **technical staff** and their associated areas: <http://www.victoria.ac.nz/fad/facilities>

WHERE TO GET HELP

Faculty of Architecture and Design Student Administration Office – Vivian Street – Level One

The Faculty's Student Administration Office is located on the first floor of the Vivian Street Wing. The first floor counter is the first point of contact for general enquiries and Faculty forms. Student Administration Advisors are available to discuss course status and give further advice and the Faculty qualifications. To check for opening hours call the Faculty Student Administration Office on (04) 463 6200.

HEALTH AND SAFETY

Students are reminded that they must comply with any health and safety instructions given by staff members in charge or work places and instructions and signs posted around the campus. All students should familiarise themselves with the *FAD Health and Safety Manual* and *Notices around the Workshops and Laboratories*. Students are advised to refer to the Student R drive for safety and other relevant information. <R:\Student Health and Safety Information>

WITHDRAWAL DATES

Information on withdrawals and refunds can be found at:

<http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

School of Design