Hadassah Academic College
Dept. of Optometry
Self-Assessment
Narrative Description of Changes made to Close Gaps Identified in Preliminary Benchmark

Dec. 2019

Introduction

Hadassah Academic College took the opportunity of the preliminary ECOO benchmark report to make significant improvements in the curriculum and to close all the gaps identified by ECOO.

The Structure of Optometry and Optometric Education in Israel with Specific Reference to Hadassah Academic College

In Israel, the law recognising optometry dates back to 1991. In 1996 programmes for optometry were established in Hadassah Academic College and Bar Ilan University. The higher education structure includes Universities and Colleges. As a College Hadassah awards degrees at Bachelor level, and a Masters course in Optometry was introduced 11 years ago. The academic year begins in October. A course for ultra-orthodox Jewish women was started four years ago with the first cohort graduating in June 2017. They do not award PhD's. The course is four years duration, but the BOptom is not a licence to practice. The programme is regulated by the Ministry of Education which is responsible for approval of the course.

Graduates have to undertake a written and practical examination which is run by the Ministry of Health but is administered by the Israeli College of Optometry through a panel of two optometrists and two ophthalmologists. There does not appear to be any 'formal' timing/structure to this pre-registration process. HAC students have an 85% pass rate in this examination, which can be taken at any point after graduating with a BSc Optometry.

Degrees of graduates from Jordan who wish to practise in Israel are not recognised by the Ministry of Education but are allowed to take the licensing examination by the Ministry of Health.

The Israel Law of Optometry states the following regarding use of diagnostic pharmaceuticals: *"An optometrist may not treat a patient with medicines or pharmaceutical agents and may not possess such agents **unless** guidelines are prepared by a Ministry of Health Committee."* Since 1991 a committee has not been appointed to prepare guidelines for optometric use of diagnostic pharmaceuticals. The HAC legal advisors allow the use of diagnostic pharmaceuticals only under the direct supervision of an ophthalmologist.

Regarding Children and Elderly patients, the 1991 law of optometry reads *"An Optometrist may not treat a child or elderly person, unless it is under the supervision of an ophthalmologist. The **Minister of Health** will issue rules based on a professional staff of doctors and optometrists appointed by the Minister to **determine the definition of "child" and "elderly"**.* At HAC, children under age 6 are seen at clinics with OMDs

Entry requirements for the Hadassah course are a high-school diploma (matriculation) including a minimum of 21 points of which 4-5 points must be in each of Maths, English and Chemistry. Physics and biology are not required subjects in themselves, as they are taught in the first year. There is a psychometric test and interviews.

The undergraduate intake is 40 - 50 on the regular course and 30 on the Ultra Orthodox programme. There has been an increase in the number of French students (around 20) with a BTS who enter a special first year to study Hebrew, anatomy, and biology (and other courses). On successful completion they go on to join the normal course in the second year. Overall there is about a 10% failure rate in the first year but a high retention rate following that. There is a Challenge Centre to provide additional

resources for students and this has been very successful. The age profile of the students varies from 18-19 years (Ultra Orthodox and Arab) and 22/25 years for Israelis that have completed military service. Overall 90% of students are female although the gender split is 50/50 for the French. The department is at full capacity.

The cost of the course to students is 10K Shekels a year (€2500). The rest of the tuition is supplemented from the Government. 50% of the students have scholarships.

There are some 1600 registered optometrists in Israel, the majority of whom work part time. There are 500 ophthalmologists for a population of 8 million a large percentage of whom are refractive surgeons and retina specialists. There are 40 paediatric ophthalmologists in Israel and another 50 who are willing to examine children.

Departmental Structure

Faculty

There are some 24 full and part time members of staff with a wide range of qualifications including PhD's, OD's, Israeli and UK trained optometrists . There are bi-annual meetings of all the faculty and also bi-annual meetings for the clinical directors together with course and clinical directors meetings.

There is no staff-student forum. There is a student union which includes student representation form each year. A student satisfaction survey, which is teacher focussed, takes place annually and the results are reviewed by the Head of department and the individual faculty members

A licenced ophthalmologist, Dr. Jonathan Levine, was recruited to the Department. Dr. Levine primarily works as a clinical supervisor (although he also teaches Ocular Anatomy). He is in clinic three days a week and all students are required to spend at least one semester in his clinics.

Facilities

The College has an Optometry clinic, which is open to the public. Clinical services include: dispensing, general intake (refraction and binocular vision), contact lenses and visual therapy/training. External clinics include screening programmes for children, low vision clinic at the Michaelson Centre at Hadassah Hospital and Hospital eye clinics where each student attends for four hours duration eight times during their 3 and 4 year as an observer. There are two satellite clinics: one at a large eye clinic at a local HMO and another at a charity that provides free eye exam and glasses for children.

A room was set up next to the main clinic for advanced technique. This room has the new perimeter and visual fields instrument (bought with OCULUS funds). The students have a requirement to do a minimum number of patients with these instruments. A fundus camera was purchased. This is an excellent teaching instrument. When a

patient presents with pathology Dr. Levine can show the fundus to all the students and not just the student examining the patient.

Syllabus and module Specification

There is a detailed module specification setting out the number of credits, hours of instruction and the lecturer together with contact details together with a course description, aims of the module, learning outcomes, required attendance, teaching arrangements and method of instruction together with a bibliography. The module content is set out on a weekly basis. The assessment method is detailed. A summary of the modules is attached as **Appendix A.**

General Optometry Clinic

This clinic takes place in both semesters in the third year (five hours a week) when the students will see 26 patients during the year. Students work on a 1:1 basis with the patient and there is a 1:3 student/supervisor ratio.

In the fourth year there is one semester in the internal clinic and an external rotation (satellite clinic) in the following semester. Students will see approximately 65-70 patients in total across the programme. There is a 1:3 or 1:4 supervisor ratio in the internal clinic. The satellite clinic is supervised by Hadassah staff.

Students will also work during the summer break and may see 5-6 patients.

There is a team of supervisors, mainly part-time optometrists. There is a staff meeting at the beginning of each semester when assessment standards are discussed. This appears to be an informal procedure. Students are matched with a different supervisor for each semester in the third year and four different supervisors in the fourth year. Specific grading rubrics are used to assess student competencies.

In the third-year assessment is based on 70% clinical work with patients, 20% on clinical homework and 10% on a formal examination. In the fourth year this is 60% patients, 20% clinical homework, 10% examination and 10% seminar.

Changes made to close the gaps:

1. An ophthalmologist is present three days a week in clinic. All 4th year students must have at least one semester in his clinic. In this clinic they legally may use cycloplegia and mydriatics. Each student is required to examine at least one child with cycloplegia and one older adult my mydriatics.

2. Investigative techniques: each students is required to perform the following techniques in clinic when appropriate: visual fields, dilated fundus biomicroscopy, fundus camera, tonometry. They record this in Meditrek:

3. At the end of the degree there is a station-based competency exam and it was modified to include refractive surgery cases.

Contact Lens Clinic

Fitting experience is gained in laboratories during both semester of the third year while real patients are seen in both semesters in the fourth year and during the summer break. Students work on a 1:1 basis i.e. 1 patient every other week.

The majority of fittings are soft lenses but students fit each other with RGP's and sclerals. There is some experience with kerataconic patients.

A change made to close the gaps was making a final station based competency practical exam. We "hire" actors to be at each station and the students must show basic competency for the following fittings:

1. RGP

2. Presbyopic lens fitting

4. Soft toric

3. Myopia control (this is the only station based on a case on not a real patient)

Binocular Vision and Visual Training

Clinical experience is in the fourth year and during the previous summer. There are two sessions a week in the first semester and one a week in the second. Patients are usually children. Ten students a session work in pairs and each student can expect to see two patients a semester, who they see on a weekly or biweekly basis. There are two supervisors to five patients.

Dispensing Clinic

This clinic runs in the second semester of the second year and the first semester of the third year. Five to seven students are in each clinic and each of them looks after ten patients. Overall number of dispensing episodes approximates 13 average (range 10-25) across the programme.

This now includes mandatory exams in vocational prescribing.

External Clinics

External clinics take place in the first and fourth years. These are held in kindergartens and schools and provide a screening service for mother and child. First year students undertake cover test, VA's, NPC, motility and stereopsis measurements. Final year students will undertake retinoscopy and ophthalmoscopy. Each first year student goes 2-3 times and every fourth year student goes once or twice. There is no formal assessment to this component, but it is seen as an enriching experience for the students, and promotes the optometry clinic to the community.

Low Vision

Visits are made to a low vision clinic. In addition a low vision clinic was established at HAC and the students rotate through that clinic. Each student is required to take care of a minimum of one patients.

Assessment

There are detailed grading and clinical examination evaluation protocols. Module specifications include assessment details together with weightings for written, laboratory and clinical case presentations and case studies. In addition to the on-going clinical and module assessments there is a 6 part examination at the end of the final semester in year 4. This does not sit within the modules but a failure means that the student cannot graduate.

All labs now have OSCE exams so that every clinical competency is tested. Students may not pass labs until they show proficiency is all clinical competencies.

Portfolio

At present it would appear that students would not see enough patients in the undergraduate programme to compile a portfolio in accordance with the level of the European Diploma.

Provide list of students (without names) that graduated in 2019-20 and show how many patients each saw.

A report from Meditrek regarding the number of actual patients has been added below as appendix B. Please note the following:

1. Meditrek counts patient encounters, not the number of patients.

2. The software has a bug and we can't download the number of dispensing patients. We estimate it to be ~19 and are in touch with the company about this problem.

3. The average number of General Intake Clinic patients is 54, range 42-71.

4. The average number of Contact Lens patients is 22, range 14-32

5. The average number of Vision Therapy encounters is 26, range 15-33. Note that this is many fewer patients – the students treat a single patient for 5-10 sessions.

We have adde

Our plan is that the students will register for an additional course after they finish the B. Optom. Program to exam the rest of the patients they need to meet the requirement.

Clinical Cases:

The students are required to submit 20 cases throughout their studies according to ECOO format.

The Self Assessment Document – A new self-assessment document generated via OSAT has been provided

This was considered in detail. Some errors in the document itself were noted. The numbering of the sub divisions in each section did not exist and where they did they did not match those in the Document.

In the clinical/ practical section the same number of patient episodes is repeated for each competency. This suggests that clinic timetable slots were used rather than actual patients seen by each student. More clarity is needed on the final year assessment.

It was agreed that the Self Assessment Document would be reviewed and resubmitted by the end of March with the intention of the benchmark being completed by the end of April.

Benchmarking Opinion against the Knowledge Base and Competencies of the European Diploma in Optometry for Hadassah College

This opinion is based on the Panel's analysis of the documents supplied and on discussions at the College

Colour Coding

Knowledge Base	**Knowledge base** for European Diploma competencies
Clinical/Practical competencies	**Clinical/practical** European Diploma competencies
	Benchmarking Opinion **Satisfactory**
	Benchmarking Opinion **Some weaknesses**
	Benchmarking Opinion **Inadequate**

PART A: Optical Technology

European Diploma Examination Sections	Self-Assessment Document Competency Areas	Provisional Opinion		HAC modifications to close the gaps
Part A 1. Optics 2. Optical Technology	**Subject 1: Geometrical Optics**			
	Subject 2: Physical Optics			
	Subject 3: Visual Optics			
	Subject 5: Optical Appliances			
	Subject 6: Occupational Optics			
	Subject 5: Optical appliances			
	Subject 6: Occupational Optics		Are these real numbers seen by every student or simply reflect the number of timetable slots? Are there individual records for all patients seen.	We have integrated OSCE based competency exam on Occupational Optics in optics labs. For the next few years, the OSCE based competency exams will also

				be given in the 4th year **Environmental Optometry Course**

PART B: Management of Visual Problems

European Diploma Examination Sections	Self-Assessment Document Competency Areas	Provisional Opinion		
Part B 1. Refraction 2. Binocular Vision 3. Contact lenses Visual Perception	**Subject 4: Visual Perception**			
	Subject 7: Vision and Ageing		Subject 7(3) developmental milestones should be included. Subject 7(4) not included	These topics have been added to **Geriatric Optometry**, 4th year
	Subject 8: Refraction			
	Subject 9: Low Vision			
	Subject 10: Ocular Motility and Binocular Vision			
	Subject 11: Contact Lenses			
	Subject 12: Investigative Techniques			

	Subject 13: Paediatric Optometry			
	Subject 14: Refractive Surgery			
	Subject 8: Refraction			
	Subject 9: Low Vision		All students should have direct experience	A clinical course called **Low Vision Clinic**, was added to 4th year. All students rotate through this course to see at least one patient hands on. They still observe at a low vision clinic outside the college
	Subject 10: Ocular Motility and Binocular Vision		It was not clear from looking at record keeping that this is routinely done	Every single patient in the **General Optometry Clinic C+D** and **Vision Therapy Clinics A+B** has ocular motilities performed and assessed by a student and the student is assessed by preceptor. Cover test, NPC and motility is performed by the preceptor and the students on every single patient and the superior compares the students results to his own. We have added the form to OSAT
	Subject 11: Contact Lenses		Not clear whether all students fit RGP lenses on real patients	The **Contact lens clinic A+B** course has a competency based final exam

				with paid patients. One of the stations is RGP patients. Another is myopia control (OSCE)
	Subject 12: Investigative Techniques		Not clear where the final competency assessment takes place. No visual field experience	In the clinical course**, General Optometry Clinic C+D** all students are required to do advanced techniques and are assessed by preceptors,
	Subject 13: Paediatric Optometry		No evidence of assessment using diagnostic drugs	An ophthalmologist is now in our clinics 3 days a week allowing legal use of diagnostics. All students in the 4th year in **General Optometry Clinic C+D** have to have at least one clinic with him. They have to show in Meditrek that they have examined at least one child with cycloplegia and one adult with mydriatics

C: General Health and Ocular Anatomy

European Diploma Examination Sections	Self-Assessment Document Competency Areas	Provisional Opinion		
Part C 1.Biology 2. Ocular Biology 3. Ocular Abnormality	**Subject 12: Investigative Techniques**			

	Subject 15: Anatomy and Histology			
	Subject 16: Neuroscience			
	Subject 17: General Physiology and Biochemistry			

	Subject 18: Microbiology and Immunology		No mycology or parasitology	This was added to the first year **Biology** course. In addition, the topic will be covered in **Advanced Contact Lenses B** – 4th year
	Subject 19: General Pharmacology	*Changed to green*		
	Subject 20: Pathology and General Medical disorders			

	Subject 21: Epidemiology and Biostatistics			
	Subject 22: Ocular Anatomy and Physiology			

	Subject 23: Ocular Pharmacology	*Changed to green*		
	Subject 24: Abnormal Ocular Conditions			

	Subject 12: Investigative Techniques		Insufficient clinical experience in visual field assessment. Very limited use of contact tonometry	This may be a gap. Currently, the students have to present evidence that they carried out different techniques. To fill the gap - Visual fields and other techniques will be made be part of the complete exam and not in isolation.
	Subject 14: Refractive Surgery		Evidence is needed that the ability is assessed for every student	Stations on this topic were added to the panel – competency based exam in **General Optometry Clinic C+D**

	Subject 24: Abnormal Ocular Conditions		Evidence is needed that the abilities are assessed for every student	Grand rounds were implemented as part of **General Optometry Clinic C+D** to teach students to identify pathology not typically seen in the clinic.

APPENDIX A – this was updated according to the new curriculum

B.Optom

	First year					
Course Code	Course name	Campus Neviim	Campus Strauss	Academic hours per semester	Academic Credit Points	ECTS
	First semester					
HAC_Course_BA_0001	Geometric Optics	Yoach Ivri	Reut Ifrach	56	4	6
HAC_Course_BA_0002	Physics	Reut Ifrach	Reut Ifrach	42	3	4.5
HAC_Course_BA_0003	Biology	Shunit Glazer	Shunit Glazer	28	2	3
HAC_Course_BA_0004	Dispensing Optics A	Rinat Carmi	Emanuelle Dimri	42	3	4.5
HAC_Course_BA_0005	Theoretical Optometry	Dinah Paritzky	Yaffa Zarbiv	28	2	3
HAC_Course_BA_0006	Biochemistry	Ilan Babai	Rachel Partush Brisk	28	2	3
HAC_Course_BA_0007	General Anatomy	Ariela Gordon Shaag	Ariela Gordon Shaag	56	4	6
HAC_Course_BA_0008	Clinical Optometry A	Dinah Paritzky	Yaffa Zarbiv	14	1	1.5
HAC_Course_BAL_0010	Clinical Optometry Laboratory A	Rema Shaabani	Natalie Shaw	28	2	3

HAC_Course_BA_0012	Microbiology and Immunology	Shunit Glazer	Shunit Glazer	28	2	3
HAC_Course_BAC_0013	External Clinics A	Orit Stzrigler	Orit Stzrigler	21	0	0
					25	**37.5**
	Second semester					
HAC_Course_BAL_0014	Dispensing Optics Laboratory A	yitzchak Shwartz	Emanuelle Dimri	28	2	3
HAC_Course_BA_0015	Physical Optics	Yoach Ivri	Reut Ifrach	42	3	4.5
HAC_Course_BA_0016	General Pharmocology	Saleh Abu-Rayah	Ilana Blech	28	2	3
HAC_Course_BA_0017	Dispensing Optics B	Yaniv Eldad	Rinat Carmi	42	3	4.5
HAC_Course_BA_0018	General Physiology and neurophysiology	Moshe Daninos	Efrat Zlotnik	56	4	6
HAC_Course_BA_0019	General Pathology	Ariela Gordon Shaag	Avigayil Bryozkin	56	4	6
HAC_Course_BA_0020	Visual Optics	Dinah Paritzky	Reut Ifrach	42	3	4.5
HAC_Course_BAC_0021	External Clinics B	Orit Stzrigler	Orit Stzrigler	21	0	0
HAC_Course_BA_0009	Clinical Optometry B	Dinah Paritzky	Yaffa Zarbiv	14	1	1.5
HAC_Course_BAL_0011	Clinical Optometry Laboratory B	Rema Shaabani	Natalie Shaw	28	2	3
				728	**24**	**36**
	Second year					

Course Code	**Course name**			**Academic hours per semester**	**Academic Credit Points**	**EC TS**
	First semester					
HAC_Course_BB_0001	Clinical Optometry C	Dinah Paritzky	Hadas Ben Eli	56	2	3
HAC_Course_BB_0002	Dispensing Optics C	Yaniv Eldad	Rinat Carmi	28	2	3
HAC_Course_BBL_0003	Dispensing Optics Laboratory B	yitzchak Shwartz	Rinat Carmi	28	2	3
HAC_Course_BBL_0004	Binocular Vision Laboratory A	Rachel Eichler	Eti Leibovitz	28	2	3
HAC_Course_BB_0005	Binocular Vision A	Liat Ganz	Liat Ganz	56	4	6
HAC_Course_BB_0006	Ocular Anatomy	Jonathan Levine	Emanuelle Dimri	42	3	4.5
HAC_Course_BB_0007	Visual Perception	Ravid Doron	Ravid Doron	28	2	3
HAC_Course_BBL_0008	Visual Perception Laboratory	Ravid Doron	Ahuvah Ravid Sapir	28	2	3
HAC_Course_BBL_0009	Clinical Optometry Laboratory C	Rema Shaabani	Natalie Shaw	56	4	6
					23	**34.5**
	Second semester					
HAC_Course_BBL_0010	Dispensing Optics Laboratory C	yitzchak Shwartz	Rinat Carmi	28	2	3
HAC_Course_BB_0011	Clinical Optometry D	Dinah Paritzky	Hadas Ben Eli	28	2	3
HAC_Course_BB_0012	Introduction to Patient Care	Rachel Eichler	Ravid Doron	28	2	3

HAC_Course_BBL_0013	Binocular Vision Laboratory B	Rachel Eichler	Eti Leibovitz	28	2	3
HAC_Course_BBC_0014	Dispensing Clinic A	yitzchak Shwartz	Rinat Carmi	14	1	1.5
HAC_Course_BB_0015	Binocular Vision B	Liat Ganz	Liat Ganz	56	4	6
HAC_Course_BB_0016	Visual Neurophysiology	Moshe Daninos	Noa Zeharia	42	3	4.5
HAC_Course_BBL_0017	Clinical Optometry Laboratory D	Rema Shaabani	Natalie Shaw	56	4	6
HAC_Course_BB_0018	Ocular Pharmacology	Saleh Abu-Rayah	Judy Wilks	28	2	3
				658	**22**	**33**
	Third year					
Course Code	**Course name**			**Academic hours per semester**	**Academic Credit Points**	**ECTS**
	First semester					
HAC_Course_BC_0001	Ocular Pathology A	Hadas Ben Eli	Hadas Ben Eli	42	3	4.5
HAC_Course_BCL_0002	Contact Lenses Laboratory A	Nogah Bromberger	Julie Ohayon	28	2	3
HAC_Course_BCL_0003	Vision Therapy Laboratory A	Yehudita Gorelick	Yehudita Gorelick	28	2	3
HAC_Course_BC_0004	Advanced Optometry A	Veronica Tzur	Veronica Tzur	56	4	6
HAC_Course_BCC_0005	Dispensing Clinic B	yitzchak Shwartz	Rinat Carmi	14	1	1.5

HAC_Course_BCL_0006	Advanced Optometry Laboratory A	Yaron Ashendorf	Naomi Barnett	28	2	3
HAC_Course_BC_0007	Contact Lenses A	Cyril Kahloun	Jenya Dableman	28	2	3
HAC_Course_BC_0008	Vision Therapy A	Rachel Eichler	Rachel Eichler	28	2	3
HAC_Course_BC_0009	Pediatric Optometry	Veronica Tzur	Veronica Tzur	14	1	1.5
HAC_Course_BCC_0010	General Clinics A	Cyril Kahloun	Cyril Kahloun	70	5	7.5
					24	**36**
	Second semester					
HAC_Course_BC_0011	Ocular Pathology B	Hadas Ben Eli	Hadas Ben Eli	42	3	4.5
HAC_Course_BCL_0012	Contact Lenses Laboratory B	Nogah Bromberger	Julie Ohayon	28	2	3
HAC_Course_BC_0013	Advanced Optometry B	Veronica Tzur	Veronica Tzur	56	4	6
HAC_Course_BCL_0014	Advanced Optometry Laboratory B	Yaron Ashendorf	Naomi Barnett	28	2	3
HAC_Course_BC_0015	Contact Lenses B	Cyril Kahloun	Jenya Dableman	42	3	4.5
HAC_Course_BC_0016	Low Vision	Veronica Tzur	Veronica Tzur	28	2	3
HAC_Course_BCL_0017	Vision Therapy Laboratory B	Yehudita Gorelick	Yehudita Gorelick	28	2	3
HAC_Course_BC_0018	Vision Therapy B	Rachel Eichler	Rachel Eichler	28	2	3
HAC_Course_BC_0020	Statistics end Epidemiology	Hadas Ben Eli	Hadas Ben Eli	28	2	3
HAC_Course_BCC_0021	General Clinics B	Cyril Kahloun	Cyril Kahloun	84	5	7.5

				728	**27**	**40.5**
	Fourth year					
Course Code	**Course name**			**Academic hours per semester**	**Academic Credit Points**	**ECTS**
	First semester					
HAC_Course_BD_0001	Advanced Contact Lenses A	Cyril Kahloun	Jenya Dableman	42	3	4.5
HAC_Course_BD_0002	Geriatric Optometry	Einat Shneor	Ravid Doron	21	1.5	2.25
HAC_Course_BD_0003	Clinic Management	Lilach Aharon	Lilach Aharon	14	1	1.5
HAC_Course_BD_0004	Environmental Optometry	Ravid Doron	Ravid Doron	14	1	1.5
HAC_Course_BDC_0005	General Clinics C	Cyril Kahloun	Cyril Kahloun	91	6	9
HAC_Course_BDC_0006	Contact lens clinic A	Eyal Gal	Eyal Gal	49	3	4.5
HAC_Course_BDC_0007	Vision Therapy Clinic A	Rachel Eichler	Rachel Eichler	42	3	4.5
HAC_Course_BDC_0008	Low Vision Clinic	Veronica Tzur	Veronica Tzur	7	0	0
HAC_Course_BD_0009	Final Project A	Einat Shneor	Ravid Doron	28	2	3
				308	**20.5**	**30.75**
	Second semester					

HAC_Course_BD_0010	Advanced Contact Lenses B	Cyril Kahloun	Jenya Dableman	40	4	6
HAC_Course_BDC_0011	General Clinics D	Cyril Kahloun	Cyril Kahloun	30	4.0	6
HAC_Course_BDC_0012	Contact lens clinic B	Eyal Gal	Eyal Gal	26	2.0	3
HAC_Course_BDC_0013	Vision Therapy Clinic B	Rachel Eichler	Rachel Eichler	30	2	3
HAC_Course_BD_0014	Final Project B	Einat Shneor	Ravid Doron	20	2	3
HAC_Course_BD_0015	Final Project Contact Lenses	Eyal Gal	Eyal Gal	10	2	3
				156	**16**	**24**
	total			**2270**	**181.5**	**272**

Appendix B

Student	Total Patients General Clinic	Total Patients Contact Lenses	Total Patients Visual Therapy These represent patient encounters and not separate patients	Total Patients Optical	Total General, Contact lens + VT	All patients with estimate of dispensing
1	49	27	33	**N/A**	109	128
2	54	24	25	**N/A**	103	122
3	53	23	25	**N/A**	101	120
4	46	24	30	**N/A**	100	119
5	54	22	26	**N/A**	102	121
6	59	17	20	**N/A**	96	115
7	50	21	18	**N/A**	89	108
8	62	23	31	**N/A**	116	135
9	56	26	22	**N/A**	104	123
10	46	22	24	**N/A**	92	111
11	45	28	29	**N/A**	102	121
12	52	19	19	**N/A**	90	109
13	57	21	19	**N/A**	97	116

14	54	22	28	**N/A**	104	123
15	45	22	23	**N/A**	90	109
16	53	24	32	**N/A**	109	128
17	62	24	26	**N/A**	112	131
18	51	19	21	**N/A**	91	110
19	57	20	27	**N/A**	104	123
20	61	16	28	**N/A**	105	124
21	51	24	26	**N/A**	101	120
22	44	21	25	**N/A**	90	109
23	51	23	26	**N/A**	100	119
24	60	32	31	**N/A**	123	142
25	49	19	29	**N/A**	97	116
26	60	20	27	**N/A**	107	126
27	51	25	29	**N/A**	105	124
28	65	14	27	**N/A**	106	125
29	54	24	22	**N/A**	100	119
30	60	21	27	**N/A**	108	127
31	45	27	22	**N/A**	94	113
32	49	25	27	**N/A**	101	120
33	52	25	28	**N/A**	105	124
34	51	26	29	**N/A**	106	125
35	49	25	25	**N/A**	99	118
36	71	20	20	**N/A**	111	130
37	51	22	23	**N/A**	96	115
38	65	20	23	**N/A**	108	127
39	58	16	15	**N/A**	89	108
40	53	24	31	**N/A**	108	127

41	62	23	29	**N/A**	114	133
42	49	22	23	**N/A**	94	113
43	45	16	27	**N/A**	88	107
44	52	30	32	**N/A**	114	133
45	49	25	30	**N/A**	104	123
46	57	18	24	**N/A**	99	118
47	42	25	26	**N/A**	93	112
48	42	22	24	**N/A**	88	107
49	48	15	17	**N/A**	80	99
50	47	25	29	**N/A**	101	120
51	54	24	31	**N/A**	109	128
52	60	24	30	**N/A**	114	133
53	68	19	29	**N/A**	116	135
54	64	21	29	**N/A**	114	133
55	61	25	26	**N/A**	112	131
56	62	19	23	**N/A**	104	123
57	45	23	27	**N/A**	95	114
58	50	23	25	**N/A**	98	117
59	63	21	29	**N/A**	113	132
60	43	21	26	**N/A**	90	109
61	45	18	28	**N/A**	91	110
62	47	19	22	**N/A**	88	107
63	61	20	23	**N/A**	104	123
64	45	19	25	**N/A**	89	108
65	53	23	26	**N/A**	102	121
66	51	22	28	**N/A**	101	120
67	71	22	26	**N/A**	119	138

68	65	27	29	**N/A**	121	140
Average	53.76470588	22.1765	25.8971	~19		
				Maximum	123	142
				Minimum	80	99
				Average	101.8382	120.8382