

**Sri Lakshmi Narayana Institute of Medical Sciences**

**Annexure 1**

Date: 02/06/2017

From:  
Prof.D.Baba, MS  
Professor and Head,  
Ophthalmology,  
Sri Lakshmi Narayana Institute Of Medical Sciences  
Bharath Institute of Higher Education and Research,  
Chennai.

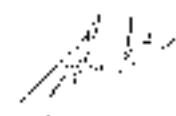
To:  
The Dean,  
Sri Lakshmi Narayana Institute Of Medical Sciences  
Bharath Institute of Higher Education and Research,  
Chennai.

**Sub: Permission to conduct value-added course: GLAUCOMA**

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course, titled: GLAUCOMA on JULY-2017 – OCT -2017. We solicit your kind permission for the same.

Kind Regards



PROF.D.BABA, MS  
HOD, OPHTHALMOLOGY

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**FOR THE USE OF DEANS OFFICE**

Names of Committee members for evaluating the course:

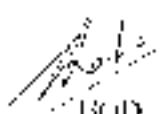
The Dean:

The HOD:

The Expert:

The committee has discussed about the course and is approved.

  
Subject Expert

  
HOD  
PROFESSOR & HOD  
OPHTHALMOLOGY  
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES  
BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH  
CHENNAI



OFFICE OF THE DEAN

**Sri Lakshmi Narayana Institute of Medical Sciences**  
OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/126/12/249/2006-ME | P-II | dt. 11-07-2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

**Ref. No. SLNMS/Dean Off/VAC / OPH08**

**Date: 03.06.2017**

**From**

The Dean

Sri Lakshmi Narayana Institute of Medical sciences,  
Pudicherry - 605502

**To**

The Registrar,

Bharath Institute of Higher Education and Research,  
Chennai - 600073.

Respected Sir

**Sub:** Request for permission and approval of Syllabus for certificate course (Value  
Added course) for the academic year 2017-2018 - Reg  
**Ref:** Requesting letter received from Departments

\*\*\*\*\*

With reference to the above, herewith forwarding the proposed list of Value-added  
courses for necessary permission and approval of syllabus to conduct the same.

1. FUNDUS EXAMINATION
2. GLAUCOMA

This is for your kind information and needful action.

Thanking you

Yours faithfully

**[DEAN]**

**Encl's:**

1. Requesting letter received from department
2. Syllabus of the course
3. Details of faculty handling course

**Sri Lakshmi Narayana Institute of Medical Sciences,  
Puducherry**

**VALUE ADDED COURSE**

1. FUNDUS EXAMINATION
2. GLAUCOMA

**COURSE CO-ORDINATOR DETAILS**

**Faculty Name:** Prof.D.Baba, MS

**Email ID:** [ophthalmologyprsf@gmail.com](mailto:ophthalmologyprsf@gmail.com)

**Mobile number:** 8585485988



# Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH

10-1, Anna Salai, Chennai - 600 025. University under section 3 of UGC Act 1956

**Ref. No. BHIER/VAC / OPII08**

**Date: 05.06.2017**

**From**

The Registrar,  
Bharath Institute of Higher Education and Research,  
Chennai - 600025.

**To**

The Dean  
Sri Lakshmi Narayana Institute of Medical sciences,  
Pondicherry - 605502

Sir / Madam

**Sub:** Approval of Syllabus to conduct certificate course (Value Added course) for the academic year 2017-2018 – Reg.

**Ref:** Ref. No. SLNVS/Dean OI/VAC /OPII08 Dated: 02.06.2017

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With reference to the above, it is to inform that the proposal submitted to conduct Value Added Course has been accepted and approved by BHIER council meeting. List of Cse VAC are mentioned below for the academic year 2017 - 2018. The abstract of the VAC course completion detail should be submitted to the Registrar office.

1. FUNDUS EXAMINATION
2. GLAUCOMA

Thanking you

Yours faithfully

  
REGISTRAR



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[Recognised by Medical Council of India, Ministry of Health letter No. UM2012/249/2005-ME (P-II) dt. 11.07.2011]  
[Affiliated to Bharath University, Chennai - TN]

### Circular

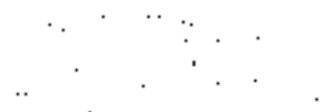
06.06.2017

Sub: Organising Value-added Course: GLAUCOMA

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, Bharath Institute of Higher Education and Research is organizing "GLAUCOMA". The course content and registration form is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution, by registered/ speed post only so as to reach on or before 10<sup>th</sup> JUNE 2017. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean



Encl: Copy of Course content

## VALUE ADDED COURSE

**1. Name of the programme & Code**

Glaucoma

**2. Duration & Period**

30 hrs & July -2017 – Oct -2017

**3. Information Brochure and Course Content of Value Added Courses**

*Enclosed as Annexure- I*

**4. List of students enrolled**

*Enclosed as Annexure- II*

**5. Assessment procedures:**

Multiple choice questions- *Enclosed as Annexure- III*

**6. Certificate model**

*Enclosed as Annexure- IV*

**7. No. of times offered during the same year**

July -2017 – Oct -2017 (1)

**8. Year of discontinuation: 2017**


**9. Summary report of each program year-wise**

Sl. No	Course Code	Value Added Course-		July -2017	Oct -2017	Strength & Year
		Course Name	Resource Persons	Target Students	Target Students	
1	OPH08	Glaucoma	Prof.K.Rathnakumar, M.S. D.O,		30	2017

**10. Course Feed Back**

*Enclosed as Annexure- V*

  
Prof.K.Rathnakumar, M.S, D.O,  
RESOURCE PERSON

  
Prof. D. Baba, M.S,  
COORDINATOR

DEPARTMENT OF POSTGRADUATE STUDIES  
SRI LAKSHMI SARASWATHI DEPARTMENT OF POSTGRADUATE STUDIES  
PUNJICHERI-605006

## Annexure 2 – Course Proposal

**Course Title: GLAUCOMA**

**Course Objective:**

1. Definition of glaucoma
2. Etiology of glaucoma
3. Classification of glaucoma
4. Primary glaucoma
5. Secondary glaucoma
6. Open angle glaucoma
7. Angle closure glaucoma
8. Management of glaucoma

**Course Outcome:** On successful completion of the course the students will be able to detect glaucomatous changes in the optic nerve head, understand visual field changes and gonioscopy findings.

**Course Audience: MBBS UNDERGRADUATES**

**Course Coordinator: PROF.D.BABA, MS,**

**Course Faculties with Qualification and Designation:**

1. Prof.D.Babu, MS, - HOD Ophthalmology
2. Prof.K.Rathnakumar, MS,DO, - Professor Ophthalmology

**Course Curriculum/Topics with schedule (Min of 30 hours)**

SINo	Date	Topic	Time	Hours
1.	10/7/2017	Definition of glaucoma	4-6PM	2
2.	15/7/2017	Etiology of glaucoma	4-7PM	1
3.	22/7/2017	Etiology of glaucoma	4-6PM	3
4.	25/7/2017	Classification of glaucoma	4-6PM	2
5.	29/7/2017	Classification of glaucoma	4-7PM	3
6.	10/8/2017	Primary glaucoma	4-7PM	3
7.	13/8/2017	Primary glaucoma	4-7PM	3
8.	15/8/2017	Secondary glaucoma	4-6PM	2
9.	17/8/2017	Secondary glaucoma	4-6PM	2
10.	20/8/2017	Open angle glaucoma	4-7PM	3
11.	21/8/2017	Angle closure glaucoma	4-6PM	2
12.	25/8/2017	Management of glaucoma	5-6PM	2
			TOTAL HOURS	30

**REFERENCE BOOKS: (Minimum 2)**

1. JACK J KANSKI clinical ophthalmology a systematic approach-6<sup>th</sup> edition
2. PARSON'S Diseases of the eye - 19<sup>th</sup> edition



## GLAUCOMA

Glaucoma is a group

of diseases characterized by a progressive optic neuropathy resulting in a characteristic appearance of the optic disc and a specific pattern of irreversible visual field defects that are associated frequently but not invariably with raised intraocular pressure (IOP)

### Classification

classified as

#### (A) *Congenital and developmental glaucomas*

1. Primary congenital glaucoma (be them associated anomalies)
2. Developmental glaucoma (with associated anomalies)

#### (B) *Primary adult glaucomas*

1. Primary open angle glaucoma (POAG)
2. Primary angle closure glaucoma (PACG)
3. Primary raised median sin glaucoma

#### (C) *Secondary glaucomas*

### PATHOGENESIS OF GLAUCOMATOUS OCULAR DAMAGE

All glaucomas are characterized by a progressive optic neuropathy

It is now well recognized that progressive optic neuropathy results from the death of retinal ganglion cells (RGC) in a typical pattern which results in characteristic optic disc appearance and specific visual field defects

#### Pathogenesis of retinal ganglion cell death

Retinal ganglion cell (RGC) death is initiated when some pathologic event, such as the transport of growth factors (neurotrophins) from the brain to the RGC,

The blockage of these neurotrophins in take a carrying capacity, and the cells are unable to maintain neuronal function

The RGCs losing their ability to maintain neuronal function undergo apoptosis and also trigger apoptosis of adjacent cells

Apoptosis is a genetically controlled cell suicide programme whereby irreversibly damaged cells that are subsequently engulfed by neighbouring cells, without eliciting any inflammatory response

52	U17MB302	GUDDATI KOTA SATYA SAI NAGA S RAMESH	<i>Gudhati</i>
53	U17MB303	GURUNATHAN S	<i>Gurunathan</i>
54	U17MB304	HARSH BHARTI	<i>Harsh</i>
55	U17MB305	HENRITIAJ	<i>Henritiaj</i>
56	U17MB306	DIYA SAIKIA	<i>Diya</i>
57	U17MB307	HIRITHICK MANICKAM R	<i>Hirithick</i>
58	U17MB308	JAYASHREE SAIKIA	<i>Jayashree</i>
59	U17MB309	JITHU MOHAN	<i>Jithu Mohan</i>
60	U17MB310	KAILA PRASANTH KUMAR	

*K.R.*  
Prof.K.Rathnakumar MS,DO

RESOURCE PERSON

*D.B.*  
Prof.D.Baba, MS,HOD  
DEPARTMENT OF CHEMISTRY  
COORDINATOR  
VIT Vellore Institute of Technology  
Vellore, Tamil Nadu - 560019

VALUE ADDED COURSE

## Glaucoma

## 4. List of Students Enrolled JUL- 2017 – OCT -2017

S.NO	Reg. No.	NAME OF THE STUDENT	Signature
31	U17MB281	RHAVYA GUPTA	R Havya
32	U17MB282	BRAHMA PRAKASH MISHRA	Brahma
33	U17MB283	CHINMAY DODANI	Chinmay
34	U17MB284	CHRISTO VINCENT.V	Christo
35	U17MB285	CIBIYASHREE.G	Cibiya
36	U17MB286	DEBIA TERMIN	Debia
37	U17MB287	DEEPIKAA R.D	Deepika
38	U17MB288	DHANUSS BHUVAN SRIDARAN	Dhanuss
39	U17MB289	DHIREN.S	Dhiren
40	U17MB290	DHWANI SOLANKI	Dhwani
41	U17MB291	DISHAL K P	Dishal
42	U17MB292	DIVYA PRIYA K	Divya
43	U17MB293	DIVYANSHI SINGH	Divyanshi
44	U17MB294	ELAKIYA BALA	Elakiya
45	U17MB295	FEMI SREE.R.A.	Femi
46	U17MB296	GANI KARTHIK	Gani
47	U17MB297	GAUTHAMAN.M	Gauthaman
48	U17MB298	GOKULAVANI G K	Gokulavani
49	U17MB299	GOWTHAM B.J	Gowtham
50	U17MB300	GRANDHI KARISHMA	Grandhi
51	U17MB301	GRESHMA SHAJI.K	Greshma

## Physiological factors

### A. Primary insults

1. **Raised intra-ocular pressure (Mechanical theory)**  
Raised intraocular pressure causes mechanical stress on the lamina cribrosa leading to axonal deformation and ischaemia by altering capillary blood flow. As a result of this, neurotrophic (growth factor) are not able to reach the retinal ganglion cell bodies on sufficient amount needed for their survival.

2. **Pressure independent factors (Vascular/ metabolic theory)**  
Factors affecting vascular perfusion of optic nerve head in the absence of raised IOP have been implicated in the glaucomatous optic neurodegeneration in patients with normal tension glaucoma (NTG).

These factors include:

- i. **Failure of autoregulatory mechanism of blood flow**
  - i. **Insufficient**
  - ii. **Excessive hypertension**
- ii. **Other factors** such as acute blood loss and abnormal coagulability profile.

### B. Secondary insults (Ischaemic/ toxic theory)

Neuronal degeneration is believed to be driven by toxic factors such as glutamate excitotoxicity.

## PRIMARY OPEN ANGLE GLAUCOMA

Primary open angle glaucoma (POAG) also known as chronic simple glaucoma of adult onset and is typically characterised by slowly progressive raised intraocular pressure (IOP) (usually recorded on at least a few occasions) associated with characteristic optic disc cupping and specific visual field defects.

## CLINICAL FEATURES

### Symptoms

1. The disease is insidious and typically asymptomatic until it has caused a significant loss of visual field.
2. Patients may experience mild headache and eye ache.
3. Occasionally, an observant patient may notice a defect in the visual field.
4. **Frequent changes in presbyopic glasses**
5. Patients develop **delayed dark adaptation**

## Signs

### I. *Anterior segment normal*

### II. *Intraocular pressure changes.*

IOP is permanently raised above 21 mm of Hg and ranges between 30 and 45 mm of Hg.

## INVESTIGATIONS

1. *Perimetry*: Appplanation tonometry should be performed over Schiotz tonometry.

2. *Diurnal variation test* is especially useful in detection of early cases.

3. *Gonioscopy*: It reveals a wide open angle of anterior chamber.

### 4. *Diagnosis of the type of glaucoma:*

5. *Slit lamp examination* of anterior segment to rule out cause of secondary open angle glaucoma.

6. *Perimetry* to detect the visual field defects.

7. *Auto fluorescence analyzer (NFLA)* is a recently introduced device which helps in detecting the



## *Therapeutic choices*

- Medical therapy (antiglaucoma medications)
- Argon or diode laser trabeculoplasty
- Filteration surgery.

## **PRIMARY ANGLE-CLOSURE GLAUCOMA**

It is a type of primary glaucoma where there is no obvious systemic or ocular cause in which rise in intraocular pressure occurs due to blockage of the

aqueous humor outflow by closure of a narrower angle of the anterior chamber.



#### **Acute primary angle-closure glaucoma**

An attack of acute primary angle-closure glaucoma occurs due to a sudden total angle closure leading to severe rise in IOP.

#### *Clinical features*

##### *Symptoms*

*Pain.* Typically acute attack is characterised by sudden onset of very severe pain in the eye which radiates along the branches of 5th nerve.

*Nausea, vomiting and photophobia* are frequently associated with pain.

*Rapidly progressive impairment of vision.* Redness, photophobia and lacrimation develop in all cases.

*Past history.* About 5 percent patients give history of typical previous intermittent attacks of subacute angle-closure glaucoma.

##### *Signs*

*Edema* may be oedematous.

*Conjunctiva* is injected, and congested, (both conjunctival and ciliary vessels are congested).

*Cornea* becomes oedematous and insensitive.

*Angle of anterior chamber* is very shallow. Aqueous flare in c/lk may be seen in either chamber.

*Angle of anterior chamber* is completely closed as seen on gonioscopy (Shaffer grade 0).

*Iris* may be discoloured.

*Pupil* is semidilated, vertically oval and fixed. It is non-reactive to both light and accommodation.

*IOP* is markedly elevated, usually between 40 and 70 mm of Hg.

*Ophthalmic* is oedematous and hyperemic.

*External eye* shows shallow anterior chamber and a narrow angle (late angle closure) glaucoma.

#### **Clinical course of acute primary angle-closure glaucoma.**

##### **Diagnostic diagnosis**

1. *From other causes of acute red eye* - Acute congestive glaucoma is similar to acute

differentiation from other causes of inflamed red eye like acute conjunctivitis and acute iridocyclitis.

2. *From secondary causes* - congestive glaucoma such as phacolytic glaucoma, acute secondary glaucoma and glaucomatocyclitic crisis.

##### **Management**

It is essentially surgical. However, medical therapy is instituted as an emergency and temporary measure before the eye is ready for operation.

##### **(A) Medical therapy**

1. *Systemic hyperosmotic agent* intravenous mannitol (1 gm/kg body weight) should be given initially to lower IOP.

2. *Acetazolamide* (a carbonic anhydrase inhibitor) 500 mg in 4 or 6 hourly fractions followed by 250 mg tablet should be given 3 times a day.

3. Analgesics or diuretics are required.

4. *Topical cycloplegics* should be started after the IOP is bit lowered by hyperosmotic agents. Atropine mescaricis sphincter spasmolytic and a response to pilocarpine (initially 2 percent pilocarpine) should be administered every 30 minutes for 2 hours and then hourly.

5. *Topical corticosteroids* like 0.5 percent dexamethasone or 0.5 percent betaxolol should also be administered twice a day to reduce the IOP.

6. *Topical steroid cycloplegic* like dexamethasone or betamethasone should be administered 5-6 times a day to reduce the inflammation.

##### **(B) Surgical treatment**

1. *Peripheral iridotomy* - It is indicated when peripheral anterior synechiae are formed in less than 50 percent of the angle of anterior chamber.

and as prophylaxis in the other eye. Peripheral iridectomy re-establishes communication between posterior and anterior chamber, so it bypasses the capillary block and thus helps in control of PAUC.

*Laser iridotomy*, a non-invasive procedure, is a good alternative to surgical iridectomy.

2. *Filtration surgery* – It should be performed in cases where IOP is not controlled with the best medical therapy following an attack of acute angle-closure glaucoma, and also when peripheral anterior synechiae are formed in more than 50 percent of the angle of the anterior chamber.

*Mechanism*. Filtration surgery provides an alternative to the angle for drainage of aqueous from anterior chamber into subconjunctival space.

(C) *Prophylactic treatment in the normal fellow eye*  
Prophylactic laser iridotomy (preferably) or surgical peripheral iridectomy should be performed in the fellow asymptomatic eye.





GLAUCOMA

MULTIPLE CHOICE QUESTIONS

Course Code: OPH08

I. ANSWER ALL THE QUESTIONS

1. Circumcorneal ciliary congestion is seen in
  - a. Conjunctivitis
  - b. Corneal ulcer
  - c. Phlyctenular conjunctivitis
  - d. Simple glaucoma
2. Open-angle glaucoma is associated with all except:
  - a. Diabetes mellitus
  - b. Chorioiditis
  - c. Myopia
  - d. Hyperparathyroidism
3. Open angle glaucoma is seen in all except:
  - a. Hypertension
  - b. Diabetes mellitus
  - c. Hypertovisosis
  - d. Central vein thrombosis
4. In early glaucoma the cupping of disc is
  - a. Round
  - b. Oval vertically
  - c. Oval horizontally
  - d. Pinpoint



**SRI LAKSHMI NARAYANA INSTITUTE OF HIGHER EDUCATION  
AND RESEARCH**

5. Arcuate field defect is seen in
- Simple exfoliative glaucoma
  - Open angle glaucoma
  - Congenital type
  - Immature cataract
6. In chronic simple glaucoma the most common field defect is
- Arcuate field defect
  - Blurring of blind spot
  - Bierum scotoma
  - Scidel's sign
7. The most important drug in the treatment of chronic simple glaucoma is
- Eserine
  - Pilocarpine
  - Diapox
  - Nephrizol
  - Vasodilators
8. Treatment of open angle glaucoma is
- Iridectomy
  - Atropine
  - Scenoids
  - Pilocarpine



**SRI LAKSHMI NARAYANA INSTITUTE OF HIGHER EDUCATION  
AND RESEARCH**

9. Cycloidalysis is particularly glaucoma is
- a. Open-angle glaucoma with synechia
  - ✓ b. Open-angle glaucoma in aphakic eyes
  - c. Open-angle glaucoma in phakic eyes
  - d. Open-angle glaucoma with relatively narrow angle
  - e. Angle-closure glaucoma
10. Rapid change in presbyopic correction is a classical feature of
- a. Neovascular glaucoma
  - b. Open angle glaucoma
  - c. Angle closure glaucoma
  - d. Glaucoma capsulare



Sri Lakshmi Narayana Institute of Medical Sciences



This is to certify that BHAWYA GUPTA (017MP281) has actively participated  
in the Value Based Course on GIADYAMA held during JULY 2017 to OCT 2017  
Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Parbhani - 431 502,  
India


Prof. K. Rathnaamma, MS, GC,  
INSTRUCTOR PERSON


Prof. U. Gaba, MS,  
COORDINATOR

Sri Lakshmi Narayana Institute of Medical Sciences



This is to certify that **BEATRYA PRAKASH VINHICA (U57MB2823)** has actively participated in the Value Added Course on **GLAUCOMA** held from **01.07.2017** to **10.07.2017** Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Postcode: 15-605 ND, India.

  
Prof. K. Rathnakumar, MS, DO,  
RESOURCE PERSON

  
Prof. D. Baba, MS,  
COORDINATOR

## Student Feedback Form

Course Name: **GLAUCOMA**

Subject Code: **OPH08**

Name of Student: \_\_\_\_\_ Roll No.: \_\_\_\_\_

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance.

Sl. No	Particulars	1	2	3	4	5
1	Objective of the course is clear					✓
2	Course contents met with your expectations					✓
3	Lecturer sequence was well planned					✓
4	Lectures were clear and easy to understand					✓
5	Teaching aids were effective					✓
6	Instructors encourage interaction and were helpful					✓
7	The level of the course					✓
8	Overall rating of the course	1	2	3	4	5

\* Rating: 5 - Outstanding, 4 - Excellent, 3 - Good, 2 - Satisfactory, 1 - Not-Satisfactory

Suggestions if any:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Bhavya Gupta*  
Signature

Date: \_\_\_\_\_

**Annexure 5**

Date : 30/10/2017

From  
Prof.D.Baba, MS,  
Professor and Head,  
Ophthalmology,  
Sri Lakshmi Narayana Institute Of Medical Sciences  
Bharathi Institute of Higher Education and Research,  
Chennai.

Through Proper Channel

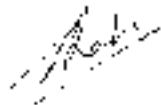
To  
The Dean,  
Sri Lakshmi Narayana Institute Of Medical Sciences  
Bharathi Institute of Higher Education and Research,  
Chennai.

**Sub: Completion of value-added course: GLAUCOMA**

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **GLAUCOMA** for 30students in JULY-OCT 2017. We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards



Prof. D.Baba, MS

HOD Ophthalmology

Encl: Certificates

Photographs