

Department of Mathematics

Veer Narmad South
Gujarat University

Prospectus 2023-24

About University

The vision of Veer Narmad South Gujarat University, as envisaged in the University Act, is to contribute to the field of higher education in the region and enable its inclusive development in all walks of life by making available trained personnel in various branches of human knowledge, keeping in mind the larger goals of nation-building. The University is committed to maintain high standards in both undergraduate and postgraduate teaching, promoting research and undertaking the requisite extension activities that would reach out to every section of society.

Veer Narmad South Gujarat University has endeavored to be an institution of excellence in higher education since its existence, keeping in view the regional needs and the emerging trends in the global scenario. A semi-urban University located at Surat City, the University has a campus spread over 210 acres. The University has been re-accredited with A grade by the National Accreditation and Assessment Council in 2017. The university was originally established under the South Gujarat University Act, 1965 passed by the Gujarat State Legislative Assembly. It became functional from the academic year of 1966 and was incorporated as a University on 23 May, 1967. Recognized by the University Grants Commission in 1968, it was renamed as Veer Narmad South Gujarat University in 2004 after the great Gujarati poet Narmad, Narmadshankar Lalshankar Dave. The mandate of the University is to meet the developmental needs of the seven districts and two Union Territory in the region and attempts at realizing their potential in every walk of life ranging from technology, business, industry and commerce to language, culture and fine arts. The basic objectives of the University as envisaged by the University Act are:

- Undergraduate and Post-graduate teaching, maintaining their high standards, and award of degrees to the candidates successful in their respective examinations.
- Promotion of research and extension activities relevant to the requirements of the region in accordance with the interests of nation building.

Profile of the Department



***About department**

Est.:1978

Department of mathematics laid down its foundation jointly with the department of Statistics and later established as a separate PG department in the university campus. Department has taken the leadership to implant PG course in the field of Computer Science. The department is well equipped with computational facilities and library. The 3 full time resourceful faculty members actively engage in research. Core area of the research are Numerical Analysis, Fluid Dynamics, Magneto-hydrodynamics, Approximation theory, Computational Techniques, Applied Functional Analysis, Number Theory, Bio Fluid Dynamics and Optimization Techniques. The students of the department are actively participate in the various academic and co-curricular activity indicates our scientific excursion.

Important of mathematics

हमारे देश में प्रारम्भ से ही गणित को बहुत महत्वपूर्ण विषय माना जाता रहा है। वेदांग ज्योतिष में गणित की महत्ता पर प्रकाश डालते हुए लिखा है-

यथा शिखा मयूराणां, नागानां मणयो यथा।

तद्वेदांग-शास्त्राणं, गणितं मूढिन वर्तते॥

अर्थात् जिस प्रकार मयूरों की शिखाएँ और सर्पों की मणियाँ शरीर में सर्वोपरि मूर्धा स्थान (मस्तक) पर विराजमान हैं, उसी प्रकार वेदों के सब अंगों तथा शास्त्रों में गणित शिरोमणि है।

ठीक उसी प्रकार जैन गणितज्ञ महावीराचार्य ने गणित के सम्बन्ध में यहाँ तक कहा है-

बहुभिर्विप्रलापैः किम् त्रैलोक्ये सचराचरे।

यत्किञ्चिद्वस्तु तत्सर्वं गणितेन बिना न हि॥

अर्थात् बहुत अधिक प्रलास करने से क्या लाभ है। इस सचराचर जगत् में जो कुछ भी वस्तु है वह सब गणित के बिना समझना सम्भव ही नहीं है।



Dr. Dilip C. Joshi

*yatha sikhA mayoorAnAm nagAnAm manayo yathA /
tadved vedAnga sAstrAnAm jyotisam (ganitam) moordhani
sthitam //*

“Like the crests on the heads of peacocks, like the gems on the hoods of the serpents, Astronomy (Mathematics) is at the top of the Vedanga sastras – the auxiliary branches of the Vedic knowledge.”.

This sloka gives the importance of Mathematics among various sciences. Very often it is referred as "Queen of all sciences". At the same time mathematics have applications in all scientific studies. And hence mathematics is also considered as " **expounder** of all sciences".

The University Department of Mathematics was started in the year 1978. Department has taken the leadership to implement PG courses in the field of Computer Science. The Department is well equipped with computational facilities and library. The resourceful faculty members actively engage in research. The broad areas of specialisation of the faculty are Numerical Analysis , fluid Mechanics, Megneto-hydrodynamics, Approximation Theory, Computational Techniques, Applied Functional Analysis, Number Theory, Bio-Fluid Dynamics, and Optimization Techniques. The students of the department are actively participates in the various academic and co-curricular activities indicates our scientific excursion.

The aim of the department is to pursue excellence in Mathematics through teaching. We are achieving our objectives with the help of significantly experience faculties.

Profile of the permanent Faculties

Photo	Name	Designation	Specialization	Contact
	Dr. Dilip C. Joshi M.Sc., M.Phil., Ph.D	Professor and Head	Spline Interpolation, Numerical Methods	dcjoshi@vnsgu.ac.in
	Dr. Devbhadra V. Shah M.Sc., Ph.D.	Associate Professor	Number Theory	dvshah@vnsgu.ac.in
	Dr. Priti V Tandel M.Sc., M.Phil., Ph.D.	Associate Professor	Fluid Dynamics, Numerical Analysis, Mathematical Modelling	pvtandel@vnsgu.ac.in
	Dr. Kaushal B. Patel M.Sc., M.Phil., Ph.D	Associate Professor	Mathematical Modelling & Simulation	kbpatel@vnsgu.ac.in

CAREER OPPORTUNITY : Teaching & Research, Banking, ICT and Software company, Data analyst, Research organization				
ELIGIBILITY : (SC/ST- 35%, OPEN/SEBC-40%), A candidate who has obtained his/her Bachelor's Degree with Mathematics shall be considered eligible for admission to M.Sc. - Mathematics course.				
Duration : 2 years ADMISSION PROCESS : Merit based	Intake	REG.	H.P.	S.F.
		63	13	150

Fee Structure			
	REGULER	HIGHER PAYMENT	SELF FINANCE
BOYS	4435	4435+15000 =19435	4435+15000 =19435
GIRLS	1935	1935+15000 =16935	1935+15000 =16935

Cut off

2022-23						
	SEAT	GEN	SEBC	SC	ST	EWS
Uni. Dept.	GIA	85.5	75.9	50.0	78.6	70.9
	GIA-HP	82.3	71.4	-	75.5	68.2
	SF	51.7	50.5	-	49.3	49.0

CAREER OPPORTUNITY : Teaching & Research, Banking, ICT and Software company, Data analyst, Research organization

AFTER MSC- (1) B.Ed.,+ M.ED. + Ph.D (School teacher, Education Department)

(2) Ph. d. (Entrance test/NET/GSLET)

(3) GPSC EXAM For recruitment in Diploma engineering college

(4) Any Science college (B.SC.), BCA college, Degree engineering College (in all government / self finance college)

(5) Bank, LIC etc. (Through Competitive Exam)

(6) Any Coaching classes

ADMISSION PROCESS :

Application form : Online mode

Admission allotment : Merit based

(Reservation Policy maintain- SC-7%, ST-15%, SEBC-27%, EWS- 10%)

NCC – B/C certificate / NSS- merit certificate/Saptdhara competition (1st,2nd,3rd rank)
certificate – 2% will be added in Merit

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
SYLLABUS FOR M.Sc. (MATHEMATICS)
SEMESTER – I

Effective from June 2022

M. Sc. Sem – I (Mathematics)						
Theory Paper/Practical	Teaching schedule Hrs/week	Exam Schedule			Total Marks	Credit
		Duration	Internal Marks	External Marks		
Theory papers:						
1: Core Paper-I PGMTH-101: Advanced Real Analysis	4	3	30	70	100	4
2: Core Paper-II PGMTH-102: Ordinary Differential Equations	4	3	30	70	100	4
3: Core Paper-III PGMTH-103: Topology	4	3	30	70	100	4
4: Inter/Multi-Disciplinary Elective Paper PGMTH-1041: Mathematical Software PGMTH-1042: Linear Programing PGMTH-1043: Integral Transforms-I PGMTH-1044: Advanced Number Theory PGMTH-1045: Special Functions-I	4	3	30	70	100	4
5: Practical based on 101 to 103 and Elective Paper PGMTH-105: Practical	12	10-15	50	100	150	6
6: Skilled based elective paper / Swayam / other MOOC courses (Course can be taken from any faculty)	2	0	20	30	50	2
		Total	190	410	600	24

M. Sc. Sem – II (Mathematics)						
Theory Paper/Practical	Teaching schedule Hrs/week	Exam Schedule			Total Marks	Credit
		Duration	Internal Marks	External Marks		
Theory papers:						
1: Core Paper-I PGMTH-201: Advanced Abstract Algebra	4	3	30	70	100	4
2: Core Paper-II PGMTH-202: Complex Analysis	4	3	30	70	100	4
3: Core Paper-III PGMTH-203: Partial Differential Equations	4	3	30	70	100	4
4: Inter/Multi-Disciplinary Elective Paper PGMTH-2041: Mathematical Modelling PGMTH-2042: Operations Research PGMTH-2043: Integral Transforms-II PGMTH-2044: Analytic Number Theory PGMTH-2045: Special Functions-II	4	3	30	70	100	4
5: Practical based on 201 to 203 and Elective Paper PGMTH-205: Practical	12	10-15	50	100	150	6
6: Skilled based elective paper / Swayam / other MOOC courses (Course can be taken from any faculty)	2	0	20	30	50	2
		Total	190	410	600	24

M.Sc. Sem.-III

301	Functional Analysis-I	302	Differential Equations
303	Calculus of Variations	304	Advanced Linear Algebra-I
PGMTH3001	Fluid Dynamics	PGMTH3002	Mathematical Software
PGMTH3003	Linear programming	PGMTH3004	Operation Research
PGMTH3005	Integral Transforms-I	PGMTH3006	Advanced Integral Transforms-I
PGMTH3007	Advanced Number Theory-I	PGMTH3008	Analytic Number Theory
PGMTH3009	Special Functions-I	PGMTH3010	Advanced Special Functions-I

M.Sc. Sem.-IV

PGMTH-401	Functional Analysis – II	PGMTH-402	Differential Geometry
PGMTH-403	Integral Equations	PGMTH-404	Advanced Linear Algebra – II
PGMTH-4001	Computational Fluid Dynamics	PGMTH-4002	Mathematical Modelling
PGMTH-4003	Non-Linear programming	PGMTH-4004	Advanced Operation Research
PGMTH-4005	Integral Transforms-II	PGMTH-4006	Advanced Integral Transforms-II
PGMTH-4007	Advanced Number Theory-II	PGMTH-4008	Introduction to Partition Theory and Cryptography
PGMTH-4009	Special Functions-II	PGMTH-4010	Advanced Special Functions-II



Dr .Dilip C. Joshi
Professor & Head

Total Teaching Experience : 29 Years
 Research Publication : 62
 Total Ph.D. degree awarded students : 09
 Other academic member : 1. R.A.C. member at Department of Mathematics, Gujarat University, Ahmedabad
 2. Member of Board of Studies in Mathematics at Uka Tarsadiya University, Bardoli.



Dr. Devbhadra V. Shah
Associate Professor

Total Teaching Experience : 29 Years
 Research Publication : 77
 Total Ph.D. degree awarded students : 10
 Other academic member : 1. Convener of 'Prof. A.M. vaidya Foundation'
 2. Chief editor of journal 'Suganitam'
 3. Member of BOS in mathematics at IITE, Gandhinagar.
 4. Subject expert, national Testing Agency, New Delhi



Dr. Priti V. Tandel
Associate Professor

Total Teaching Experience	: 20 Years
Research Publication	: 31
Total Ph.D. degree awarded students	: 00



Dr. Kaushal B. Patel
Associate Professor (S.F.)

Total Teaching Experience : 16 Years
 Research Publication : 47
 Total Ph.D. degree awarded students : 04

Details of last Five years Student admitted

2018-19	M.Sc. Sem.-I	M.Sc. Sem.-III
	213	228
2019-20	M.Sc. Sem.-I	M.Sc. Sem.-III
	239	188
2020-21	M.Sc. Sem.-I	M.Sc. Sem.-III
	227	230
2021-22	M.Sc. Sem.-I	M.Sc. Sem.-III
	193	224
2022-23	M.Sc. Sem.-I	M.Sc. Sem.-III
	158	182

Infrastructure of the department

Classrooms	08
Laboratory	02
Library	01
Hall	01
Girls room	01

Library



Classroom



Laboratory- 1



Computer Laboratory equip with more than 30 Computers along with LAN and internet facility smart board, PA system, Audio visual components are the inherent components of the laboratory

Laboratory- 2



Computer Laboratory equip with more than 30 Computers along with LAN and internet facility, e-books, digital materials are also available in this laboratory

Cultural activity / Competition achievement

- Teacher's day celebration
- Gurupurnima celebration
- Tree plantation day celebration
- Mehendi competition
- Rangoli competition

- Painting competition
- Photography competition
- Essay competition
- Quize competition
- Participation in classical dance in youth festival
- Participation in light vocal music in youth festival
- Participation in handicraft in youth festival
- Participation in drama in youth festival
- Participation in garba in youth festival
- Participation in kala yatra in youth festival





Day celebration by Dept.

1. Ramanujan Birth anniversary celebration by Dept. on every 22nd December.
2. Yoga day celebration by dept. on every 21st June.
3. **National Mathematics day celebration.**

Facility and benefit given by Govt./Dept.

1. Scholarship benefit given by Govt. to SC/ST/SEBC and OBC students by Digital Gujarat platform.
2. National scholarship available for Minority students.
3. Freeship card facility given by Govt. to SC/ST students
4. Single girl child scholarship given by govt.
5. Hostel facility available in Uni. campus.
6. Bus/Railway concession given by dept.
7. Other benefit given by Uni. and Government.