

Curriculum Vitae

Dr. Bhagwan Balasaheb Ghute

Assistant Professor,
Department of Geology
Toshniwal Arts, Commerce and Science
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Faculty (author) Identifiers

ORCID ID: 0000-0002-5378-6700
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Vidwan ID: 128085
Google
Scholar : IHDVFZEAAAAJ

Academic Objective :

To establish a career in geology where my geological skills will be put to enhance students knowledge and also committed to continuous self-development.

Academic Qualifications :

- | | |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2003-2006 | B.Sc. (Geology) from Swami Ramanand Teerth Marathwada University, Nanded with first class (61.95%) |
| 2006-2008 | M.Sc. in Geology from Swami Ramanand Teerth Marathwada University, Nanded first-class with distinction (79.48% first merit) |
| December 2010 | State Eligibility Test (SET), for lectureship in the <i>Earth, Atmospheric, Ocean and Planetary science</i> , Maharashtra (First Rank) |
| 2009-2014 | Obtained Ph.D. in Geology from Swami Ramanand Teerth Marathwada University, Nanded. Thesis entitled <i>Quaternary geology and geomorphology of Godavari river basin in Parbhani district of Maharashtra</i> (Supervisor: Prof. Shaikh Md. Babar & Prof. R.D. Kaplay) |

Recognized as :

- Post Graduate (PG) teacher by Swami Ramanand Teerth Marathwada University, Nanded
- Ph.D. Research supervisor by Swami Ramanand Teerth Marathwada University, Nanded (Currently 01 student allocated)

Work Experience :

- **Assistant Professor (Academic Level-12)** from 15-12-2021 to till date at Toshniwal Arts, Commerce and Science College, Sengaon Dist. Hingoli- 431542 (M.S) India (*Affiliated to SRTM University Nanded*)
- **Assistant Professor (Academic Level-11)** from 15-12-2016 to 15-12-2021 at Toshniwal Arts, Commerce and Science College, Sengaon Dist. Hingoli- 431542 (M.S) India (*Affiliated to SRTM University Nanded*)
- **Assistant Professor (Academic Level-10)** from 10-12-2013 to 15-12-2016 at Toshniwal Arts, Commerce and Science College, Sengaon Dist. Hingoli- 431542 (M.S) India (*Affiliated to SRTM University Nanded*)
- **Assistant Professor (Academic Level-10)** from 15-06-2011 to 09-12-2013 at G.B. Tatha Tatyasaheb Khare Commerce and P.G Dhere Arts and Science College Guhagar, Dist. Ratnagiri- 415703 (M.S) India (*Affiliated to Mumbai University*)
- **Project Fellow** from 17-06-2008 to 14-06-2011 on UGC-sponsored Major Research Project to Prof. Shaikh Md. Babar at Dept of Geology, D.S.M. College, Parbhani-431401 (M.S.) India

Research Interests :

- Quaternary Geology and Geomorphology
- Remote sensing and GIS
- Environmental Geology
- Climate Change
- Hydrogeology

Subject taught at UG level:

- Mineralogy and Crystallography
- Petrology
- Geotectonics
- Structural Geology
- Engineering geology and Hydrogeology
- Economic geology and prospecting

Awards :

- Dr. Bhimrao Pingale First Merit Award in M.Sc. Geology by SRTM University, Nanded in 2008

Professional Memberships :

- Life Member, Himalayan Geology Journal (LMNo-215).
- Member of YES Network - Promoting Earth Science for Society.
- Life Member, Gondwana Geological Society, Nagpur
- Life Member, Indian Society of Remote Sensing, Dehradun

Software/s Skill

- PYTHON
- Corel draw
- ArcGIS
- ERDAS Imagine
- DaVinci Resolve, Movavi, shotcut etc.

MRP Completed/ Ongoing :

1. **Title of MRP: Quaternary Geology and Morphotectonics of Kauyadhu River basin in Washim- Hingoli District of Maharashtra**

Duration: 2018-2020

Grant received: 1,00,000/- (Rupees One lakh only)

Sponsored authority : SRTM University, Nanded

Status: Completed

Principal Investigator

2. **Title of MRP: Sediment assessment through remote sensing and Hydrological modeling of Yeldari Reservoir, Maharashtra**

Duration: 2020-2022

Grant received: 4,25,000/- (Four lakh twenty-five thousand only)

Sponsored authority: RGST, Commission Mumbai

Status: Completed

Principal Investigator

Academic duties at University and college level:

- Chairman, Paper setting for B.Sc. examination at SRTM University, Nanded
- Member, Paper setting for B.Sc. university, examination at SRTM University, Nanded
- External examiner, B.Sc. practical examination for SRTM University, Nanded
- External examiner, M.Sc. practical examination for SRTM University, Nanded
- Co-ordinator, Solar Energy Committee, at the college level
- Member, EDP Cell at the college level
- Member, Water harvesting Committee, at the college level
- Member, Hazardous Waste Management Committee, at the college level
- Member, Annual Magazine Publication, Committee, at the college level
- Member, NAAC Criteria III (2013-2016) at the college level
- Member, NAAC Criteria II (2017 to till date) at the college level
- Member, Examination Committee (2011-2013) at the college level

Geological fieldwork carried out :

- Bundelkhand Craton, 2009 (MP)
- Western Ghat, Deccan Trap (MH)
- Himalaya Dehradun, 2009 (UK)
- Cuddupah Basin, 2010 (AP)
- Entire Seashore of Kerala 2016
- Chitradurga Schist Belt, Karnataka, 2018

Training completed (FDP/Short term/ RC/OC etc.) :

- 1 15 days training at Indian Institute of Geomagnetism Bombay (IIG-Bombay)
- 2 Ninth Course on "Application of Remote Sensing and GIS for Mineral Exploration" To Be Conducted By GSI Training Institute, Under NNRMS Programme Sponsored by Indian Space Research Organization from 1st March to 8th May 2010
- 3 An orientation course on Groundwater Modelling in Basaltic Terrain organised by Maulana Azad College of Arts, Science and Commerce and Association of Geologists and Hydrogeologists (Geoforum) Aurangabad from 1st to 7th June 2011
- 4 28th Orientation Programme from 02.12.2015 to 29.12.2015 UGC-HRDC, Maulana Azad National Urdu University, Hyderabad
- 5 Refresher Course in Disaster Management from 24.11.2016 to 14.12.2016 UGC-HRDC, Maulana Azad National Urdu University, Hyderabad
- 6 A workshop on Rare Earths, Zircon and Titanium Resources from Beach Placer deposits of India: Theory and Practice from 07.11.2016 to 11.11.2016 Geological Survey of India and Atomic Mineral Directorate (AMD), Thiruvananthapuram, Kerala
- 7 Field Training for graduate/ post Graduate Teachers FTC, Chitradurga, Karnatka during 10.06.2018 to 16.06.2018 sponsored by Geological Survey of India (Govt. of India) & Geological Society of India
- 8 A five-day short-term course on Self Awareness Higher Goals in Education (SAHGE) 2019 at IIT Madras during 20.05.2019 to 24.05.2019
- 9 Completed NPTEL-AICTE Eight-week Faculty Development Programme on Remote Sensing and GIS conducted by IIT, Guwahati during August-October 2019
- 10 Refresher Course on Entrepreneurship from 24.09.2018 to 13.09.2018 S.V. University, Tirupati

- 11 Attended Five Days FDP on e-content Development for Teachers organised by UGC- HRDC, Pune University from 01.06.2020 to 05.06.2020
- 12 National Workshop on “Universal Stage: Principles and Practice” organized at the Department of Geology, Savitribai Phule Pune University between 17.01.2020 and 18.01.2020
- 13 Refresher course on Managing Online Classes & Co-creating MOOCs organised by PMMMNM, Ramanujan College University of Delhi from 20.04.2020 to 06.05.2020
- 14 FDP on 124 Online Short Term Course on EContent Development organised by UGC-HRDC Gujarat University, Ahmedabad from 03.05.2021 to 09.05.2021
- 15 DIDAC India 2022 Asia’s Largest and India’s Only Exhibition for Education and Skilling Resources 21st - 23rd September 2022 Bangalore International Exhibition Centre, Bengaluru

Papers presented/attended at Conferences/Seminars/Symposia:

- 1 UGC Sponsored State Level Seminar on “Water crises in Maharashtra: Pollution, Conservation and Disaster management for flood and drought” by Arts, Commerce & Science college Kille Dharur, 20-21 November, 2008.
- 2 2nd International Conference on Precambrian Continental Growth and Tectonism (PCGT 2009) Organized by Department of Geology, Institute of Earth Sciences Bundelkhand University Jhansi-284 128 (UP) INDIA.
- 3 Workshop on Seismogenesis to Prediction of Earthquakes: Himalaya and Indian shield Perspective (SPRED-2009) on 22-24 October 2009 at Wadia Institute of Himalayan Geology, Dehradun (UK).
- 4 Workshop on Application of Remote Sensing and GIS in Water Resources Management on 10th March 2010 at NGRI Hyderabad organised by Central Ground Water Board.
- 5 UGC Sponsored National Seminar on "Groundwater Recharge, Quality and Auditing in Hard Rocks" Organised by Dept. of Geology Deogiri College Aurangabad, 26-27 November 2009
- 6 National Seminar on "Exploration Techniques in Sustainable Management of Groundwater" organized by the School of Earth Sciences, at S.R.T.M. University of Nanded, 5-6 Feb. 2010
- 7 National Conference on Global warming's impact on Environment organized by Department of Geography B. Raghunath College Parbhani, 27-28 Feb. 2011.
- 8 One day Workshop on Water Management and Indian River Connecting project on 22 March 2012 at Deogiri College Aurangabad

- 9 International Conference on Technological Innovations in Engineering and Management (ICTIEM-2018) organised by Deogiri Institute of Engineering and Management Studies, Aurangabad, 23-24 Feb. 2018.
- 10 International conference on advances in Science of the Earth: Relevance to the Society organised by School of Earth Sciences, SRTM University, Nanded, 24-26 November 2022

List of abstract published:

- 1 Babar Md., Chunchekar R.V. and **Ghute B.B.** and Atkore, S.M., (2009) Palaeoseismic Evidences in Deformational Sediments of Killari-Latur 1993 Earthquake affected area of Maharashtra. Workshop on Seismogenesis to PREDiction of earthquakes : Himalaya and Indian Shield Perspective (SPRED- 2009) Wadia Institute of Himalayan Geology Dehra Dun. pp 4.
- 2 Muley R.B., Babar Md., Atkore, S.M., and **Ghute B.B.** (2009) Hydrogeological Studies of Artificial Recharge Structures for Watershed Development in Deccan Basalt. UGC Sponsored State Level Seminar on “Water crisis in Maharashtra: Pollution Conservation and Disaster Management. Organized by Arts, Commerce and Science College, Kille Dharur. pp 68.
- 3 Babar Md., **Ghute B.B.** and Chunchekar R.V. (2010) Application of Remote sensing, Geomorphological and hydrogeological studies for Groundwater Potential of Indrayani Nala Macro-watershed in Parbhani District, Maharashtra. pp. 68.
- 4 Muley R.B., Babar Md., Atkore, S.M., and **Ghute B.B.** (2010) Impact of Geology on Groundwater and water Harvesting Structures in Deccan Basalt Area: A case study of Jhari percolation tank in Parbhani district, Maharashtra. pp. 75.
- 5 **Ghute B.B.** (2022) A GIS-based flood risk assessment and mapping using morphometric analysis in the Kayadhu river basin, Maharashtra International conference on advances in Science of the Earth: Relevance to the Society organised by School of Earth Sciences, SRTM University, Nanded

List of Publications:

- 1 Babar Md., Chunchekar R.V., **Ghute B.B.**, Kaplay R.D. (2009) Tectonic Geomorphology of Terna-Manjra River Basin, West Central India. Journal Indian Geological Congress, Vol.1 (2), pp. 69-78.
- 2 Babar Md., **Ghute B.B.** and Chunchekar R.V. (2010) Quaternary Morphostratigraphy and Lithostratigraphy of Godavari River sediments in Parbhani District Maharashtra. Gondwana Geological Magazine, Spl. Vol. 12, pp.271-274.
- 3 Babar Md., Muley R.B., **Ghute B.B.**, Atkore S. M. (2010) Integrated Approach for Groundwater Potential of Khadki Macro-Watershed in Parbhani District, Maharashtra, India. doi.org/10.1142/9789814355339_0018

- 4 Babar Md, Chunchekar R.V., **Ghute B.B.**, Atkore S.M. (2011) Faunal Assemblages of Quaternary Sediments in Manjara River Basin, Maharashtra. Bioscience Discovery Vol. 02 No. (01), pp. 5- 9.
- 5 Babar Md, **Ghute B.B.**, Chunchekar R.V. (2011) Geomorphic Indicators of Neotectonic from the Deccan Basaltic province: A Study from the Upper Godavari River Basin, Maharashtra, India. International Journal on Earth Sciences and Engineering, Vol. 04(2), pp. 297-308.
- 6 Babar Md., Chunchekar R.V. and **Ghute B.B.** (2012) Morphometric Attributes of Terna Reservoir, Latur –Osmanabad Districts, Maharashtra. E-International Scientific Research Journal, Vol. 4(2) pp. 65-72.
- 7 Babar Md., Chunchekar R.V. and **Ghute B.B.** (2012) Physico-Chemical Characteristics of Quaternary Sediments of Terna River Sub-Basin East Central Maharashtra, India. Advances in Geosciences. doi.org/10.1142/9789814405775_0007
- 8 Babar Md., **Ghute B.B.**, Atkore S.M. and Chunchekar R.V. (2012) Remote Sensing and Hydrogeomorphological Studies for Evaluation of Groundwater Potential Zones of Jhod Nala Watershed in Parbhani District, Maharashtra. Journal of Applied Geochemistry, pp 1-9
- 9 Babar Md., Chunchekar R, Yadava MG, **Ghute B** (2012) Geology and Geomorphology of Terna River Basin in West Central India. Quaternary Science Journal, Vol. 61 (2), pp.156–167
- 10 Babar Md., **Ghute B.B.** (2014) Depositional Environment of Quaternary Sediments of Upper Godavari River in Maharashtra, India. Journal of Applied Geochemistry. 16(03) pp 296-305
- 11 Muley R.B., Babar Md. and **Ghute B.B.** (2014) Geomorphological and Hydrogeological Studies of Borna Macro-Watershed, Parbhani and Beed District, Maharashtra. Gondwana Geological Magazine. Vol.14 pp 71-75
- 12 Babar Md., Chunchekar R.V., **Ghute B.B.** (2015). Geospatial techniques in Hydrogeological investigations: A case study from sub-basin, Terna river Osmanabad - Latur district, Maharashtra, India. International Journal of recent trends in Science and Technology. Spl. Vol.pp.40-44
- 13 Muley R.B., Babar Md., **Ghute B.B.**, Atkore S. M. (2015). Hydrogeological studies of Parbhani district, Maharashtra, India: With reference to groundwater utilization and management. International Journal of recent trends in Science and Technology. Spl. Vol. pp, 83-87
- 14 **Ghute B.B.** (2018) Integrated approach for groundwater potential of Jhod Macro-Watershed in Nanded district, Maharashtra, India. IJSEM, Vol.3, pp.265-270
- 15 **Ghute B.B.** and Kendre T.U. (2019). Occurrence of fluoride in the drinking water sources from Hingoli district, Maharashtra. Review of Research. Vol.1(1) pp. 54-59
- 16 **Ghute B. B.** and Babar Md. (2021) An Approach to Mapping Groundwater Recharge Potential Zones using Geospatial Techniques

in Kayadhu River Basin, Maharashtra Indian Journal of Agricultural Research DOI: 10.18805/IJARE.A-5477

- 17 **Ghute, B.B.**, Shaikh, M.B. & Halder, B. Impact assessment of natural and anthropogenic activities using remote sensing and GIS techniques in the Upper Purna River basin, Maharashtra, India. *Model. Earth Syst. Environ.* (2022). <https://doi.org/10.1007/s40808-022-01576-3>
- 18 **Ghute, B.B.**, Soil erosion and sediment assessment using geospatial tools and RUSLE modeling approach: a case study of Yeldari reservoir, Maharashtra (Manuscript under preparation)

List of Book chapter:

- 1 **Ghute, B.B.**, Babar, S.M. (2021). Morphotectonics of Kayadhu River Basin in Washim-Hingoli-Nanded Districts, Maharashtra: A Spatial Analysis. In: Shandilya, A.K., Singh, V.K., Bhatt, S.C., Dubey, C.S. (eds) *Geological and Geo-Environmental Processes on Earth*. Springer Natural Hazards. Springer, Singapore. https://doi.org/10.1007/978-981-16-4122-0_20
- 2 **Ghute, B.B.**, and Sarmah P. (2023) A GIS-based flood risk assessment and mapping using morphometric analysis in the Kayadhu river basin, Maharashtra for the upcoming book *River Conservation and Water Resource Management* (Accepted for publication as a book chapter by Springer in 2023)

List of papers published under conference proceedings:

- 1 Muley R.B., Babar ., Atkore S.M., **Ghute B.B.** (2010) Application of Geology and Remote Sensing in the Groundwater Potential Zones in Drought Prone Areas of Parbhani District, Maharashtra, India. proceeding volume of 3rd International conference on Hydrology and watershed Management held at Hyderabad.pp.3-6.

Resource person:

Sr. No	Title/ Theme of Lecture/ Talk	Date & Duration	Type & Level	Organized by
1	Online Training Programme on Educational Video Creation	11 th -13 th May 2020	Online Training National Level (online mode)	Depts. of English, Fishery Science & Geology, Toshniwal Arts, Commerce & Science College, Sengon, Hingoli (Maharashtra)
2	FDP on Educational Video Creation (E-Content Development)	05 th -10 th June 2020	FDP National Level (online mode)	Bharti Vidyapeeth's College of Engineering, Kolhapur
3	One Week Online FDP on Educational Video Creation (EContent Development)	12 th -18 th June 2020	FDP National Level (online mode)	Rajarshi Mahatma Gandhi Arts, Commerce & Science College, Saoli, Chandrapur, Maharashtra

4	FDP on Educational Video Creation	18 th -23 rd June 2020	FDP National Level (online mode)	District Institute of Education & Training (DIET), Kumulur, Tiruchirappalli, Tamil Nadu
5	One Week Online FDP on Educational Video Creation (E-Content Development)	22 nd -25 th & 28 th - 29 th June 2020	Online Training National Level (online mode)	Toshniwal Arts, Commerce & Science College & Swami Ramanand Teerth Marathwada University, Nanded
6	One Week Pedagogical Training for Teachers On Tools for Online Teaching Learning and Evaluation	01 st -06 th July 2020	Online Training National Level (online mode)	School of Mathematical Sciences Swami Ramanand Teerth Marathwada University, Nanded
7	One Week Online FDP on Educational Video Creation (E-Content Development)	16 th -21 st July 2020	FDP National Level (online mode)	Mazbat College & KBR College, Mazbat, Assam
8	Six Days Online FDP on Educational Video Creation (EContent Development)	22 nd -27 th July 2020	FDP National Level (online mode)	IQAC, Rayant Shikshan Sanstha's Rajarshi Chhatrapati Shahu College, Kolhapur, (MS)
9	One Week Online FDP on Educational Video Creation (EContent Development)	03 rd -08 th August 2020	FDP National Level (online mode)	IQAC, Chandraroop Dakle Jain College of Commerce, Shrirampur, Ahmednagar, Maharashtra
10	Online FDP on E-Content Development (under UGC Paramarsh)	31 st Aug – 04 th Sept. 2020	FDP National Level (online mode)	IQAC, Shri Shivaji College, Parbhani, Maharashtra
11	One Week Online FDP on Educational Video Creation (E-Content Development)	21 st -27 th September 2020	FDP National Level (online mode)	Vijaygarh Jyotish Ray College, Bijoygarh, Kolkata, West Bengal

References:

Dr. Shaikh Md. Babar

Professor, Department of Geology,
Dnyanopasak College, Parbhani
Maharashtra- 431401

Dr. K. Vijaya Kumar

Professor, Department of Earth Sciences
Indian Institute of Petroleum & Energy
Visakhapatnam Andhra Pradesh – 530003

Bhagwan B. Ghute

E-Content developed for geology students by B.B. Ghute

Sr. No.	Topic	Video link
1.	Physical properties of tourmaline	https://youtu.be/X2YoQQqr8k
2.	Classification of ultramafic rocks	https://youtu.be/jRS-puWt91o
3.	Concentration factor	https://youtu.be/CaZoGXQ8O5I
4.	Calcite mineral	https://youtu.be/B73BRpzSt4k
5.	Quartz mineral	https://youtu.be/-Qp0h-LLwyE
6.	Magmatic process of ore formation	https://youtu.be/JQmAx8q34GI
7.	Lamprophyre rock	https://youtu.be/ifdfbmWgXMo
8.	Bastar Craton	https://youtu.be/7hnjRamFinY
9.	Quaternary period in geological time scale	https://youtu.be/JLhItOkKnDY
10.	Darcy's Law	https://youtu.be/9Sve8GEcMh0
11.	Types of dam	https://youtu.be/aaiF16cQR1g
12.	Quaternary stratigraphy	https://youtu.be/t15cze4_14E
13.	Quaternary paleoclimate	https://youtu.be/FRNklqQsWrI
14.	Biostratigraphy	https://youtu.be/z_hlA9m94Ws
15.	Chemical properties	https://youtu.be/mmV6W1qjbiU
16.	Placer deposits	https://youtu.be/oxfcShqK-F8
17.	Crystal symmetry	https://youtu.be/y7M5G5yS6_w
18.	Inlier and outlier	https://youtu.be/BdNdH-BX9nc
19.	Folds nomenclature/ John Ramsay's classification of fold	https://youtu.be/mvCRbSj0vac https://youtu.be/c2hCge_y1Fo
20.	Volcano part 1	https://youtu.be/lmdnmU4E670
21.	Volcano part 2	https://youtu.be/AqV-mTl6Dqc
22.	Classification of faults	https://youtu.be/z_xF6UtuH-0
23.	Magnetic Method of exploration part 1	https://youtu.be/CEzdjy9rPCs
24.	Magnetic Method of exploration part 2	https://youtu.be/wZwG0O2cfHw
25.	Silver deposits	https://youtu.be/a4Qe1uJOuas

26.	Gold deposits	https://youtu.be/7K3y-MLkNo0
27.	Asbestos deposits	https://youtu.be/nbrKhcYioAE
28.	Delta landform	https://youtu.be/ckX096GHZQw
29.	Types of plate collisions	https://youtu.be/fKwIzJ5A1tc
30.	Plate and plate boundaries	https://youtu.be/UYXM7GMLeYk
31.	Elements of crystal	https://youtu.be/JpIMMgMVmfQ
32.	Miller indices	https://youtu.be/2UYq43IMOVl
33.	Geological time scale	https://youtu.be/MNXWncnT-ws
34.	Principles of stratigraphy	https://youtu.be/--mRT6bnW3Q
35.	Soil and its types	https://youtu.be/Ch7pD6_e85A
36.	Components and types of faults	https://youtu.be/VJ3B26GXfeg
37.	Metamorphic structures	https://youtu.be/1SvIGpwqBYE
38.	Causes of Dinosaur's extinction	https://youtu.be/dSNA1ysDBNk
39.	Ophiolite rock	https://youtu.be/e3i4tvi_Cio
40.	Crystal system	https://youtu.be/_FvGk_riSeM
41.	Basics of geochemistry interpretation	https://youtu.be/WEwSXYu1xkY
42.	Komatiite rock	https://youtu.be/EZkHRdaGhUk
43.	Granite rock	https://youtu.be/NUolqZFBkYU
44.	Carbonatite rock	https://youtu.be/0F-i7epITik
45.	Continental drifting	https://youtu.be/SeVII0KDGlc
46.	Isostasy	https://youtu.be/7ReKR-4Nfq8
47.	Physical properties of the mineral part 1	https://youtu.be/Dq1RQ5O116E
48.	Physical properties of the mineral part 2	https://youtu.be/hoBnLq1sjzQ
49.	Earthquake part 1	https://youtu.be/3Es3u839Pm0
50.	Earthquake part 2	https://youtu.be/7BVXgQGPOVY
51.	Morphometric analysis	https://youtu.be/J_j2rGolNdU
52.	Physiographic divisions of India	https://youtu.be/F45v5_X1fQo

53.	Pyroxene mineral group	https://youtu.be/aXRQsXwFR7M
54.	Olivine mineral group	https://youtu.be/sp7Dka3PSow
55.	Silicate structures	https://youtu.be/nr0hoDSgtY4
56.	Forms of the igneous bodies	https://youtu.be/EHCL3t58EyY
57.	Bowens reaction series	https://youtu.be/rqn4sr_9B48
58.	Solar system	https://youtu.be/sBd1Mte54ZM
59.	Hydrological cycle	https://youtu.be/CnMrDOIqvIA
60.	Internal structure of the earth	https://youtu.be/ujdASi5OfHM
61.	Unconformity	https://youtu.be/i-5wYGE-FXc
62.	Diamond vs graphite	https://youtu.be/Cro8vpnNVcc
63.	Magma generation	https://youtu.be/uPMxBOVDe-o
64.	Sedimentary rocks	https://youtu.be/bzZUmG8MbUc
65.	Metamorphic rocks	https://youtu.be/S8Rn4dURUEA
66.	Structures in igneous rocks	https://youtu.be/-qe_wQU7cEI
67.	Igneous rocks	https://youtu.be/S1tkSI7Ja1s