

COURSE AS.389.315: ANCIENT COLOR: THE TECHNOLOGIES AND MEANINGS OF COLOR IN ANTIQUITY

INSTRUCTOR: SANCHITA BALACHANDRAN
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COURSE HOURS: FRIDAY 1:30-3:50
OFFICE HOURS: FRIDAY 4-5, OR BY APPOINTMENT, GILMAN 137
MAILBOX: GILMAN 113

COURSE DESCRIPTION

What role did the colorful surfaces of sculptures, spaces and textiles play in the ancient world? We examine historical texts and recent scholarly and scientific publications on the technologies and meanings of color in antiquity, and use imaging and analytical techniques to study polychromed objects from the Johns Hopkins Archaeological Museum. Cross-listed with Near Eastern Studies, Classics, and History of Art. Class meets in the Archaeological Museum (Gilman 150).

Given our short time together, we can only approach the study of ancient color as an introduction to many complex debates and conversations related to the histories, sciences, philosophies and cultural contexts within which color functioned. We are also severely limited by what survives the vagaries of the archaeological and historical record, our reliance on texts in English, and the fact that most of our evidence is from elite contexts rather than what might have been experienced by most people. We are also bound to the cultures and materials represented by the Archaeological Museum because the purpose of this class is to literally “see” color differently by examining ancient objects. Our aim is to recognize the need for a much more interdisciplinary and sensory way of thinking about color in the ancient world. As such, the readings and object studies are intentionally drawn from many different fields of study.

The following scholars contributed to and offered advice on this course’s contents: Mark Abbe (University of Georgia), Hilary Becker (Binghamton University), Jennifer Clarvoe (Kenyon College), Paul Delnero (Johns Hopkins University), Marian Feldman (Johns Hopkins University), Kenneth Lapatin (The J. Paul Getty Museum), Becky Martin (Boston University), Anand Pandian (Johns Hopkins University) and David Saunders (British Museum). I thank them for adding many other shades to my approach to color.

COURSE LEARNING GOALS

- Learn to identify materials and fabrication technologies for ancient objects, especially as related to colored surfaces
- Introduce techniques of scientific analysis available for the study of archaeological materials, and utilize in-house non-destructive examination tools to study objects
- Analyze observed physical characteristics on ancient objects in the context of material published the archaeological, art historical and scientific literatures
- Consider the meaning(s) of different materials and technologies within their cultural and historical contexts
- Prepare and present documentation of evidence gathered from physical examination techniques and relevant literatures

COURSE MINDSET

- Be curious and humble

- Be willing to be confused and not know what you are looking at. Openness to different interpretations is crucial
- Be ready to work collaboratively and in communication with people who have different skills and disciplinary knowledge
- Recognize that you might not get a “final answer” but that the process of learning to ask new questions is incredibly valuable
- Have gratitude and respect for the people and makers of the past
- Remember that the instructor and students are learning together

COURSE REQUIREMENTS

You are expected to attend every class with all readings for that day completed. All readings will be available through Blackboard or on the Internet, as noted. Read articles in the order listed. Come prepared to discuss the readings and to respond to your colleagues as they lead class discussions. More information on discussion and the contributions to the synesthesia playlist will be given in class.

Missing even a single class means missing a significant amount of information. As there are no make-up classes, ensure that you attend every class and come with the reading completed and prepared to ask questions and look at objects. If you need to miss class for religious observances, notify the instructor in advance. Do not come to class if you are feeling ill; notify the instructor as soon as you feel ill and may need to miss a class. Medical excuses for missing a class may require official documentation via the Deans Office. Plan to attend class on the Friday before Spring Break (3/16); arrange any travel plans for after our class meeting.

Each class meeting is structured in the following manner: brief quiz, student-led class discussion, 10-minute break, and then lecture and hands-on work with museum objects. The quiz will test you on basic material introduced in the reading due for that day. Each quiz will have approximately 10 fill-in-the-blank or short answer questions. The quizzes may also include hands-on examination of objects or testing you on the use of museum equipment. I will drop the lowest quiz from the semester when calculating your final grade.

Students (in groups of three) will be assigned a museum object to examine and analyze in detail using some of the imaging and analytical equipment available to us at the Archaeological Museum. Object examinations and analyses require sustained and focused work outside of class time. You are expected to perform these studies outside of class time with the instructor. These visits will be scheduled through the instructor. You are expected to be on time for these meetings; in the case of “no shows,” these meetings will not be re-scheduled and will mean that an important part of your analyses will not be completed.

Your grade will be determined according to the following criteria:

Class participation	10%
Quizzes (lowest quiz is dropped)	15%
Leading class discussion (in groups of 2)/synesthesia playlist	15%
Palette bibliography (10 sources)	5%
Ancient palette essay (5 pages)	20%
Object examination assignment	20%
• First draft	
• Final draft	
Object examination presentation	15%

- 7-minute class presentation
- Corrected and uploaded Powerpoint

“A”s are awarded for exceptional performance in class. Simply completing the assignments as required will result in a “B” grade. In general, grades are calculated based on the following: A=95 and above; A-=92 and above; B+=89 and above; B=85 and above, and so on. In order to be graded, all work must be turned in on time. Late work receives a “0.”

COURSE ETHICS AND POLICIES

Our classroom is a space for rigorous and thoughtful discussion and debate. You are expected to respect and support the class community and its members. As a community, we agree to communicate our ideas and our dissent respectfully and constructively.

Johns Hopkins University has laid out strict policies on ethical academic conduct. Ethical violations include but are not limited to plagiarism, forgery, unauthorized collaboration, improper use of the Internet and electronic devices, reuse of assignments and lying. Plagiarism will not be tolerated, and any work that is thought to be plagiarized will receive a failing grade, and the Dean of Academic Affairs notified.

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition.

In this class, you are being given the privilege of handling and working with ancient objects, and you are expected abide by all museum protocols. Anyone seen willfully mishandling objects or treating them inappropriately will have the privilege of working with them revoked. Food, drink and gum are not allowed in the museum and should be disposed of as far from the museum space as possible. **There are no digital devices allowed in the seminar room; this includes laptops, Ipads, tablets, cell phones, etc.** You are expected to take notes with pencil only on paper. All other materials including coats and bags should be stored in the cubbies outside the seminar room. For more information on museum procedures, see: <http://archaeologicalmuseum.jhu.edu/visit/museum-visitor-guidelines/>

Report any violations you witness to the instructor. You may consult the associate dean of student affairs and/or the chairman of the Ethics Board beforehand. See the guide on “Academic Ethics for Undergraduates” and the Ethics Board Web site (<http://ethics.jhu.edu>) for more information.

Any student with a disability who may need accommodations in this class should obtain an accommodation letter from Student Disability Services, 385 Garland, (410)516-4720, studentdisabilityservices@jhu.edu

PUBLICITY DISCLAIMER

The mission of the Johns Hopkins Archaeological Museum is to engage members of the Johns Hopkins University, academic researchers, and both the Baltimore and worldwide public in an interactive, interdisciplinary and collaborative study of the ancient world through the examination, research, exhibition and conservation of archaeological objects. As such, it is important the work we do here is shared as much as possible with our many publics. Images of our class at work, or images and findings of our projects will likely show up on the museum’s website (archaeologicalmuseum.jhu.edu) and Facebook page

(<https://www.facebook.com/JohnsHopkinsArchaeologicalMuseum>). Please speak to the instructor if you have any concerns about this policy.

COURSE SCHEDULE

2/2: Introduction/Introduction to object handling

READINGS DUE:

- Rimbaud, A. 1884. "Vowels." Translation by Christian Boek. http://wagsrevue.com/Download/Issue_3/Voyelles.pdf
- Cummings, e.e. 1923. "The Sky Was." <https://hellopoetry.com/poem/1646/the-sky-was/>
- Ok Go. 2012, "Three Primary Colors." Sesame Street: <https://www.youtube.com/watch?v=yu44JRTIxSQ>
- Squire, M. 2016. "Introductory Reflections. Making Sense of Ancient Sight." In M. Squire, ed. *Sight and the Ancient Senses.*: Routledge: 1-30

OPTIONAL READINGS:

- Radiolab podcast, May 22, 2012: "Colors," season 10, episode 13
<http://www.radiolab.org/story/211119-colors/>

IN CLASS/DUE:

- ❖ Color exercise
- ❖ Look at objects
- ❖ Object handling quiz: Read Odegaard N. and G. Katterman. 1992. *A Guide to Handling Anthropological Museum Collections*. Take a brief quiz on this material in the museum.

2/9: Why and How We See: The Science and Perception of Color

READINGS DUE:

- Scientific American, April 4, 2014. "How Do We See?" <https://www.scientificamerican.com/video/how-do-we-see-brain-basics-2-video/>
- Hoeppe, G. 2007. "Of Philosophers and the Color Blue." In *Why is the Sky Blue. Discovering the Color of Life*. Princeton, Princeton University Press: 9-31.
- Chirimuuta, M. July 23, 2015. "The Reality of Color is Perception. An Argument For a New Definition of Color." *Nautil.us*. <http://nautil.us/issue/26/color/the-reality-of-color-is-perception>
- Berns, R. 2016. "Color and Spatial Vision." In *Color Science and the Visual Arts*. Getty Conservation Institute, Los Angeles: 33-73.

OPTIONAL READINGS:

- Palmer, S. July 16, 2015. "What color is this song? Test your inner synesthesia." *Nautil.us*.
<http://nautil.us/issue/26/color/what-color-is-this-song>

IN CLASS/DUE:

- ❖ Select objects for projects in class
- ❖ Sign up for leading discussion

2/16: What We Call What We See: Language and Color

READINGS DUE:

- Vox video, May 16, 2017: "The Surprising Pattern Behind Color Names Around the World":
<https://www.vox.com/videos/2017/5/16/15646500/color-pattern-language>
- Warburton D.A. 2016. "Ancient Color Categories." In Luo M.R., ed. *Encyclopedia of Color Science and Technology*. Springer, New York, NY: 24-31.
- Thavapalan, S. et al. 2016. "Color and Meaning in Ancient Mesopotamia: The Case of Egyptian Blue." *Zeitschrift fuer Assyriologie* 106: 198-214.
- Bradley, M. 2013. "Colour as Synaesthetic Experience in Antiquity." In Butler, S. and A. Purves, eds. *Synaesthesia and the Ancient Senses*. Acumen: 127-140
- Wharton, D. 2016. "Abstract and Embodied Colors in Pliny the Elder's Natural History. Embodiment in Latin Semantics." In Short, W.M., ed. *Studies in Language Companion Series* 174. John Benjamin Publishing Company: 86-117.

2/23: The Materiality of Color: Pigments, Dyes, Binders and Coatings

READINGS DUE:

- Scott, D.A. 2016. "A Review of Ancient Egyptian Pigments and Cosmetics." *Studies in Conservation*, 61: 4, 185-202.
- Duckworth, C.N. 2012. "Imitation, Artificiality and Creation: The Colour and Perception of the Earliest Glass in New Kingdom Egypt." *Cambridge Archaeological Journal* 22, 3: 309-327.
- Brecolaki, H. 2014. "'Precious Colours' In Ancient Greek Polychromy and Painting: Material Aspects and Symbolic Values." *Revue Archéologique* 1, 57: 3-35.
- Delaney, J. et al. 2017. "Macroscale Multimodal Imaging Reveals Ancient Painting Production Technology and the Vogue in Greco-Roman Egypt." *Nature. Scientific Reports*. 1-12.
- Granzotto, C. and J. Arslanoglu. 2017. "Revealing the Binding Medium of a Roman Egyptian Painted Mummy Shroud." *Journal of Cultural Heritage* 27: 170-174.

OPTIONAL READINGS:

- Stager, J. "The Materiality of Color in ancient Mediterranean Art." In Goldman, R., ed. *Essays in Global Color History*. Gorgias Press: Piscataway, NJ. 2016: 97-119.
- Crowley, P. 2016. "Crystalline Aesthetics and the Classical Concept of the Medium." *West 86th: A Journal of Decorative Arts, Design History and Material Culture* 23, 2: 220-251.

IN CLASS/DUE:

- Pigments exercise with ochres
- Bibliography for color palette essay due in class. Bring paper copy and also email a copy to the instructor by 1:30pm.

3/2: Historical Erasure and Recent Re-discovery of Color in Art History and Museums

READINGS DUE:

- Ostergaard, J.S. "The Polychromy of Antique Sculpture: A Challenge to Western Ideals?" In Brinkman, V. et al., eds., *Circumlitio. The Polychromy of Antique and Medieval Sculpture*. Liebieghaus Skulpturensammlung: Frankfurt: 78-105.

- Selections from Dyer, J. et al. 2013. *Multispectral Imaging in Reflectance and Photo-Induced Luminescence modes: A User Manual*. <http://www.britishmuseum.org/pdf/charisma-multispectral-imaging-manual-2013.pdf>
 - Introduction, pp. 1-7.
 - Visible-reflected images, pp. 65-67.
 - Infrared-reflected images, pp. 71-72.
 - UV-reflected images, pp. 76-77.
 - UV-induced visible luminescence images, pp. 81-82.
 - Visible-induced infrared luminescence images, 86-87.
- Rose-Greenland, F. 2016. "Color Perception in Sociology: Materiality and Authenticity at the *Gods in Color* show." *Sociological Theory* 34, 2: 81-105.

IN CLASS/DUE:

- ❖ Multiband imaging work to be scheduled this week
- ❖ Pigments exercise with ochres continued

3/9: The Chaîne Opératoire of Color: Economics and Trade

READINGS DUE:

- Gliozzo, E., et al. 2014. "The Volterranean Urns: Etruscan Painting and Travertine Supply." *Archaeometry* 56: 728-745.
- Walton, M.S. and K. Trentelman. 2009. "Romano-Egyptian Red Lead Pigment: A Subsidiary Commodity of Spanish Silver Mining and Refinement." *Archaeometry* 51, 5: 845-860.
- Martelli, M. 2015. "Alchemical Textiles: Colourful Garments, Recipes and Dyeing Techniques in Graeco-Roman Egypt." In M. Harlow and M.-L. Nosch, eds., *Greek and Roman Textiles and Dress. An Interdisciplinary Studies in Textiles and Dress*. Oxford, Oxbow Books: 111-129.
- Beeston, R. and H. Becker. 2013. "Investigation of ancient Roman Pigments by Portable X-ray Fluorescence Spectroscopy and Polarized Light Microscopy. In Armitage R. et al, eds. *Archaeological Chemistry VIII, ACS Symposium Series*. Washington DC: American Chemical Society: 18-41.

IN CLASS/DUE:

- ❖ Talk with Professor Hilary Becker, Assistant Professor of Classical Studies, Department of Classical and Near Eastern Studies, Binghamton University

3/16: Color in Context: Architectural Spaces

READINGS DUE:

- Nagel, A. 2013. "Color and Gilding in Achaemenid Architecture and Sculpture." In Potts, D.T. ed. *The Oxford Handbook of Ancient Iran*. New York: Oxford University Press: 596-621.
- Bryan, B. M. 2010 "Pharaonic Painting through the New Kingdom." In Lloyd, A.B. ed. *Companion to Ancient Egypt*. Oxford: Wiley-Blackwell: 990-1007.
- Pope, S. and P. Schultz. 2014. "The Chryselephantine Doors of the Parthenon." *American Journal of Archaeology* 118, 1: 19-31
- Payne, E. and D. Booms. 2014. "Analysis of Pigment Palettes as Evidence for Room Status in Nero's Golden House." *British Museum Technical Research Bulletin* 8: 117-126.
http://www.britishmuseum.org/pdf/BMTRB_8_Payne_and_Booms.pdf

3/23: SPRING BREAK—NO CLASS

3/30: Color in Context: Polychromed Sculpture

READINGS DUE:

- Abbe, M. 2015. Polychromy." In Friedland, E.A. et al., eds. *The Oxford Handbook of Roman Sculpture*. Oxford: Oxford University Press. 2015. 173-188.
- Explore the pages on the Ancient Polychromy Network. <http://www.ancientpolychromynetwork.com>
- Selections from Panzanelli, R. et al., eds. 2008. *The Color of Life. Polychromy in Sculpture*. Los Angeles: The J. Paul Getty Museum and the Getty Research Institute.
 - Brinkmann, V. "The Polychromy of Ancient Greek Sculpture." 18-40.
 - Ostergaard, J.S. "Emerging Colors: Roman Sculptural Polychromy Revived." 41-62.
- Brecoulaki, H. et al. 2014. "A Microcosm of Colour and Shine. The Polychromy of Chryselephantine Couches from Ancient Macedonia." *Techne* 40, 9-22.

IN CLASS/DUE:

- ❖ Talk with Professor Mark Abbe, Assistant Professor of Art History, University of George, Athens
- ❖ Color palette essay due in class. Bring paper copy and also email a copy to the instructor by 1:30pm. X-ray fluorescence work to be scheduled for this week

4/6: Color Isn't Just Paint: Other Polychromies

READINGS DUE:

- Descamps-Lequime, S. 2015. "The Color of Bronze. Polychromy and the Aesthetics of Bronze Surfaces." In Daehner, J. and K. Lapatin, eds., *Power and Pathos. Bronze Sculpture of the Hellenistic World*. Los Angeles: The J. Paul Getty Trust: 148-165.
- La Niece et al. 2002. "Polychromy and Egyptian Bronze: New Evidence for Artificial Coloration." *Studies in Conservation* 47, 2: 95-108.
- Brøns, C. and A. Skovmøller. 2017. "Colour-coding the Roman Toga: the Materiality of Textiles Represented in Ancient Sculpture." *Antike Kunst* 60: 55-79, ill. 9-11.
- Neri, E. et al. 2017. "Dating the Mosaics of the Durrës Amphitheatre Through Interdisciplinary Analysis." *Journal of Cultural Heritage* 28: 27-36

IN CLASS/DUE:

- ❖ X-ray fluorescence work to be scheduled this week

4/13: Color Isn't Just Paint: Skin and Skin Adornment

READINGS DUE:

- Paulson, S. July 2, 2015. "About Your Skin." *Nautil.us*. <http://nautil.us/issue/26/color/about-your-skin>
- From *Notes in the History of Art*, 30, 3, Special Issue: Superficial? Approaches to Painted Sculpture.
 - Morgan, L. 2011. "Enlivening the Body: Color and Stone Statues in Old Kingdom Egypt.": 4-11.
 - Brinkmann, V. 2011. "The 'Persian Riders' From the Athenian Acropolis; Or, a Reconstruction of the 'Third Generation.": 12-17.
- Cheal, C. 2004. "The Meaning of Color: Skin Color in Eighteenth Dynasty Egypt." In Fluehr-Lobban, C. and K. Rhodes, eds., *Race and Identity in the Nile Valley: Ancient and Modern Perspectives*. Trenton, NJ: The Red Sea Press: 47-69.
- Skovmøller, A. 2014. "Where Marble Meets Colour: Surface Texturing of Hair, Skin and Dress on Roman Marble Portraits as Support for Painted Polychromy." In Harlow, M. and M.-L. Nosch, eds., *Greek and*

Roman Textiles and Dress. An Interdisciplinary Studies in Textiles and Dress. Oxford: Oxbow Books: 279-297.

- Verri, G. et al. 2010. "The Treu head: A Case study in Roman Sculptural Polychromy." *British Museum Technical Research Bulletin* 4: 39-53. <http://www.britishmuseum.org/pdf/BMTRB4%20Verri.pdf>

IN CLASS/DUE:

- ❖ Reflectance transformation imaging work to be scheduled this week

4/20: No Class—Instructor at Conference

IN CLASS/DUE:

- ❖ First full draft of examination report due by email to instructor by 4pm. Drop off a printed copy under the instructor's office door (Gilman 137).

4/27: Open session

No assigned reading or quiz. Use this time to look at your objects and finalize your reports and presentations on your individual objects.

5/4: Student presentations

IN CLASS/DUE:

- ❖ 7-minute group presentations
- ❖ Upload powerpoint presentation to JHBox by midnight on 5/3. Late uploads receive a '0.'

5/10 (Th): Final papers and updated powerpoint presentations due by noon to JH Box