

2007-09 Cal Poly Catalog

Updated Course Descriptions.

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[Graphic Communication Department](#)

GRC–GRAPHIC COMMUNICATION

GRC 101 Introduction to Graphic Communication (3)

Graphic communication history, theory, processes, applications, and practices. New technologies impacting day-to-day communication including traditional and digital printing and publishing, and non-print imaging including Internet applications. Overview of design technology, electronic publishing and imaging, printing and imaging management, packaging graphics, industry segments. 3 lectures.

GRC 200 Special Problems for Undergraduates (1–2)

Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 2 units per quarter. Prerequisite: Consent of instructor.

GRC 201 Electronic Publishing Systems (3)

Significance, terminology, and components of electronic publishing systems. Current hardware and software options in the graphic communication industry. Overview of PostScript, PDF, HTML and XML. 2 lectures, 1 laboratory.

GRC 202 Image Capture and Manipulation (3)

Conventional and digital methods of image capture and manipulation for print and electronic media. Digital photography, scanning, photo-retouching, and color proofing. Photographic materials and equipment for graphic communication. Densitometry, light sources, exposure control, and color management systems. 2 lectures, 1 laboratory. Prerequisite: GRC 101 and either GRC 201 or GRC 377.

GRC 203 Electronic Prepress (3)

Terminology, materials, equipment, facilities and methods used in electronic prepress. File formats, fonts, imposition, trapping, screen angling, PostScript, and PDF. Preflight, workflow options, automation, proofing, and CTP. 2 lectures, 1 laboratory. Prerequisite: GRC 202 or ART 184.

GRC 204 Introduction to Contemporary Print Management and Manufacturing (4)

Analysis and comparison of print and digital media manufacturing methods to current world-class techniques practiced in industry. Principles and concepts of lean manufacturing applied to print for improved profitability. 4 lectures. Prerequisite: GRC 101.

GRC 211 Substrates, Inks and Toners (4)

Technical aspects of paper, other substrates, inks and toners used in the printing industry. Manufacture, application and interaction of these materials are examined in relation to particular processes and end use requirements. Hands-on use of computerized densitometers, spectrophotometers and performance testing equipment. 3 lectures, 1 laboratory. Prerequisite: GRC 101.

GRC 212 Substrates, Inks and Toners: Theory (3)

Technical aspects of paper, other substrates, inks and toners used in the printing industry. Manufacture, application, and interaction of these materials are examined in relation to particular processes and end use requirements. Credit not allowed for GRC majors. 3 lectures. Prerequisite: GRC 101.

GRC 218 Digital Typography (4)

History, development and application of typography in relation to electronic file preparation for cross media publishing. In-depth study of communication principles and visual organization utilizing page layout

software. Font technology and management for the creative, print and publishing industries. 3 lectures, 1 laboratory. Prerequisite: GRC 203 or GRC 377.

GRC 260 Introduction to Research Methods in Graphic Communication (3)

Introduction to research methods for preparing scholarly and defensible papers and projects, and in conducting qualitative and quantitative evaluations, testing and research in graphic communication. Methods covered include the Scientific Method, historical and descriptive research, questionnaires, Elite and Specialized Interviewing, content analysis, and sampling. Design of research projects for each method taught. 2 lectures, 1 activity. Prerequisite: GRC 101

GRC 316 Flexographic Printing Technology (3)

Analysis of flexographic printing technology for flexible packaging, label printing, folding and corrugated cartons. Applications of computers to the management and technical function of flexographic printing technology. 2 lectures, 1 laboratory. Prerequisite: GRC 211.

GRC 320 Managing Quality in the Graphic Arts (4)

Theory and practices of quality systems in the graphic arts industry. Emphasis on Deming Systems Thinking, Lean Manufacturing, Six Sigma, ISO, and Malcolm Baldrige. Quantifying customer expectations, specifications, standard operating procedures, SPC tools, and employee empowerment in the graphic arts. 3 lectures, 1 laboratory. Prerequisite: GRC 315 or GRC 328, and STAT 217.

GRC 322 Advanced Digital Typography (3)

Advanced typographic principles relating to print and electronic media. Page layout and font management with consideration for multiple media. Applied problems focusing on typographic structure and file preparation. 2 lectures, 1 laboratory. Prerequisite: GRC 218 and GRC 338.

GRC 324 Binding, Finishing, and Distribution Processes (3)

Imposition techniques, cutting, and folding. Stitch, case and perfect binding techniques and applications. Operational and aesthetic uses of die cutting, scoring, creasing, foil stamping and embossing techniques. Fulfillment and mailing operations. Applications of computers to the management and technical function of binding; finishing and distribution. 2 lectures, 1 laboratory. Prerequisite: GRC 101.

GRC 325 Binding and Finishing Processes: Theory (2)

Imposition techniques, cutting, folding, book and publication binding. Stitch, case and adhesive binding techniques and applications. Technology and aesthetic uses of die cutting, scoring, creasing, foil stamping and embossing. Fulfillment and mailing operations. Applications of computers to the management and technical function of binding; finishing and distribution. Credit not allowed for GRC majors. 2 lectures. Prerequisite: GRC 101.

GRC 328 Sheetfed Printing Technology (4)

Theory, practice and application of sheetfed printing and plate technology for commercial, book, advertising, catalog, packaging and reprographic segments of the printing industry. Press configurations, materials, computerized press controls, workflow, pressroom management, coating and quality control. Plate types, quality and new technologies for sheetfed printing. 3 lectures, 1 laboratory. Prerequisite: GRC 211.

GRC 329 Web Offset and Gravure Printing Technologies (3)

Introduction to web offset and gravure printing for newspapers, packaging, magazines, books, catalogs and commercial products. Application of technology to the management and production of web offset and gravure printing. Preparation and use of gravure cylinders. 2 lectures, 1 laboratory. Prerequisite: GRC 328.

GRC 331 Color Management and Quality Analysis (4)

Color management, perception, psychology, and measurement for print and digital media. Application of systems engineering concepts to color workflow to maximize overall quality in the digital imaging and printing industry. Development of print quality assessment skills. 3 lectures, 1 activity. Prerequisite: GRC 202 and PSC 101.

GRC 337 Consumer Packaging (3)

Problem-solving strategies for package printing that integrate concepts from marketing, design and technology. Package manufacturing, function, quality, visual appeal, and economics are addressed. 2 lectures, 1 laboratory. Prerequisite: Junior standing or consent of instructor.

GRC 338 Digital Content Management and Variable Data Printing (4)

Advanced application of type arrangement, digital illustration, image capture and page layout. Digital content management strategies for print and electronic media including file management, database principles, archiving, document formats, variable data publishing, workflow analysis and repurposing. Technical and creative problem-solving for content production and management in print and web publishing. 3 lectures, 1 laboratory. Prerequisite: GRC 218. *Corrected effective Summer 2007.*

GRC 339 Digital Design and Production for Multiple Media (4)

In-depth understanding of design and production as it relates to print and on-line digital media. Advanced production techniques in image editing and multimedia applications. Preparation and evaluation of computer-generated images. 3 lectures, 1 laboratory. Prerequisite: GRC 338.

GRC 357 Specialty Printing Technologies (3)

Specialty printing technologies used in garment decorating, signage, point of purchase displays, decals, security printing and various forms of packaging. Digital file preparation and printing using special processes including screen printing, pad printing, sublimation printing and wide-format printing. 2 lectures, 1 laboratory. Prerequisite: GRC 201 or GRC 377.

GRC 361 Marketing and Sales Management for Print and Digital Media (4)

Identification and development of target markets for products and services in the graphic communication industry. Deployment of strategies in pricing, promotion and distribution management. Application of customer relationship management techniques for personal selling, forecasting and planning. 3 lectures, 1 laboratory. Prerequisite: GRC 101.

GRC 377 Web and Print Publishing (4)

Web and print publishing technology and its impact on society. The technologies of scanning, typography, graphics, layout, and design for print and web publishing including decision-making considerations. The application of scientific and mathematical principles to web and print publishing technologies. 3 lectures, 1 laboratory. Prerequisite: Completion of Area B and junior standing. Graphic Communication majors will not receive GE Area F credit.

GE Area F**GRC 400 Special Problems for Advanced Undergraduates (1–2)**

Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 2 units per quarter. Prerequisite: Consent of instructor.

GRC 402 Digital Printing and Emerging Technologies in Graphic Communication (3)

Application of digital printing including the study of marking engines, RIPs, and related technologies. Emerging graphic communication technologies that are impacting the methods and procedures of producing and distributing print media. Technological transitions and how to manage technological change. 2 lectures, 1 activity. Prerequisite: GRC 338. *Corrected effective Summer 2007.*

GRC 403 Estimating for Print and Digital Media (4)

Estimating the cost of various kinds of print and digital products and services. Development of budgeted hour costs and production standards. Cost estimating methods for Print on Demand, VDP, sheetfed lithography, web site development, and wide-format output. Analysis of material, labor and other cost factors. 3 lectures, 1 laboratory. Prerequisite: GRC 315 or GRC 328.

GRC 411 Strategic Trends and Costing Issues in Print and Digital Media (4)

Graphic communication industry market trends. Strategies for profitably positioning graphic communication companies. Costing methodology and

practices for graphic communication companies. Company profitability using ratio analysis. Innovative management practices in the graphic communication industry. 3 lectures, 1 activity. Prerequisite: GRC 403.

GRC 421 Production Management for Print and Digital Media (4)

Management principles and production control methodologies for print and digitally-imaged products. Organization analysis, decision-making, equipment and inventory planning, resource optimization, and the application of contemporary quality management initiatives. 3 lectures, 1 activity. Prerequisite: GRC 315 or GRC 328, and MATH 117, MATH 118, or MATH 120.

GRC 422 Human Resource Management Issues for Print and Digital Media (4)

Human resource management integrated into the success of graphic communication companies. A comprehensive management approach is utilized emphasizing policy development, training, safety, motivation, facilitation skills, team building and empowerment, ethical and legal issues in the printing industry. 3 lectures, 1 laboratory. Prerequisite: GRC 421.

GRC 429 Digital Media (3)

Current digital media including audio, video, animation, and multimedia. File formats and their role in workflow and electronic document delivery. Publishing options for digital media. Digital media standards, legal and ethical issues. 2 lectures, 1 laboratory. Prerequisite: GRC 338.

GRC 431 Printing Plant Layout Analysis (3)

Elements of printing plant site selections, equipment planning, inventory planning, and workflow optimization. Design and layout of printing plants for effective space utilization. Organization of plant services. 2 lectures, 1 activity. Prerequisite: GRC 421.

GRC 432 Imaging Systems Management (4)

Management issues associated with the introduction and use of computerized electronic prepress systems. Strategic, technical, marketing, financial, production, operational, and personnel aspects of color prepress work in a capital-intensive environment. 4 lectures. Prerequisite: GRC 338.

GRC 439 Book Design Technology (4)

Advanced creative problem-solving strategies associated with the technologies used in book design and production. Advanced techniques in page layout, design, typography, type specification and image manipulation as they relate to output technology. Content, format and distribution of print and electronic books. 3 lectures, 1 laboratory. Prerequisite: Senior standing, GRC 218 and GRC 338.

GRC 440 Magazine and Newspaper Design Technology (4)

Concept development of magazine and newspaper design technology. Design and technical considerations as they relate to output and rendering technology. Application of organizational structures such as grids, formatting and sequential design. Advanced techniques in digital information and image manipulation. Content, format and distribution of print and electronic magazines and newspapers. 3 lectures, 1 laboratory. Prerequisite: Senior standing, GRC 218 and GRC 338.

GRC 451 Management Topics in Graphic Communication (3)

Current trends and practices in select graphic communication management topics. Open to undergraduate and graduate students. The Schedule of Classes will list topic selected. Total credit limited to 12 units. Prerequisite: GRC 101 and GRC 201.

GRC 452 Emerging Digital Topics in Graphic Communication (3)

Current trends and practices in select graphic communication emerging digital topics. Open to undergraduate and graduate students. The Schedule of Classes will list topic selected. Total credit limited to 12 units. 3 lectures. Prerequisite: GRC 101 and GRC 201.

GRC 453 Design Reproduction Topics in Graphic Communication (3)

Current trends and practices in select graphic communication design reproduction topics. Open to undergraduate and graduate students. The Schedule of Classes will list topic selected. Total credit limited to 12 units. 3 lectures. Prerequisite: GRC 101 and GRC 201.

GRC 460 Research Methods in Graphic Communication (2)

Research methods for preparing scholarly and defensible papers and senior projects, and in conducting qualitative and quantitative evaluations, testing, and research in graphic communication. Methods covered include statistical, historical, descriptive, questionnaires, interviewing, and sampling. 1 lecture, 1 activity. Prerequisite: Senior standing and STAT 217.

GRC 461 Senior Project (3)

Selection and completion of a project under faculty supervision. Projects typical of problems which graduates must solve in their fields of employment. Project results are presented in formal report. Minimum 90 hours total time. Prerequisite: GRC 460.

GRC 470 Selected Advanced Topics (1–4)

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list topic selected. Total credit limited to 8 units. 1–4 lectures. Prerequisite: Consent of instructor.

GRC 472 Applied Graphic Communication Practices (2)

Application of theories and practices to University Graphic Systems as they apply to commercial printing, publication printing, digital media and newspaper industries. Major credit limited to 4 units; total credit limited to 18 units. 2 lectures. Prerequisite: GRC 101.

GRC 473 Applied Graphic Communication Management Practices (2)

Management theories and practices in the graphic communication industry. Application of theories and practices to University Graphic Systems as they apply to commercial printing, publication printing, digital media and newspaper industries. Major credit limited to 6 units; total credit limited to 18 units. 2 lectures. Prerequisite: GRC 472 and consent of instructor.

GRC 485 Cooperative Education Experience (6) (CR/NC)

Part-time work experience in business, industry, government, and other areas of student career interest. Positions are paid and usually require relocation and registration in course for two consecutive quarters. Formal report and evaluation by work supervisor required. Total credit limited to 16 units. Credit/No Credit grading only. Prerequisite: Sophomore standing and consent of instructor.

GRC 495 Cooperative Education Experience (12) (CR/NC)

Full-time work experience in business, industry, government, and other areas of student career interest. Positions are paid and usually require relocation and registration in course for two consecutive quarters. Formal report and evaluation by work supervisor required. Total credit limited to 16 units. Credit/No Credit grading only. Prerequisite: Sophomore standing and consent of instructor.

GRC 500 Special Problems in Document Systems Management for Graduate Students (2)

Investigation, research, studies of problems in document systems management. Repeated course over four quarters working with University Graphic Systems, the Graphic Communication Institute at Cal Poly, and with individual faculty. Total credit limited to 8 units. Prerequisite: Second year MBA student, GRC 101 and GRC 201 or advisor approval.

GRC 595 Cooperative Education Experience (12) (CR/NC)

Advanced study analysis and full-time work experience in student's career field; current innovations, practices, and problems in administration, supervision, and organization of business, industry, and government. Must have demonstrated ability to do independent work and research in career field. Total credit limited to 12 units. Credit/No Credit grading only. Prerequisite: Graduate standing and consent of instructor.